Issue 136

PS

1964 Series

THE PREVENTIVE MAINTENANCE MONTHLY

Know Your "Traffic Light" Pubs

GREEN - AMBER - RED

"Can we accomplish this, Mr. Secretary?"

"Will your Division meet this requirement, General?"

"Is the 1st Brigade ready, Colonel?"

"Can your battalion swing it, Colonel?"

"Are you positive, Captain?"

"Can you be sure, Lieutenant?"

"Is your tank green, amber, *or* red, *Sergeant?"*

There's a big difference and a lot of distance between all of those questions—but the answer to all of them starts off with the last one. The answer you give, about your tank, or jeep, or howitzer or what-haveyou, will influence what the man tells The Man who reports to THE MAN, who . . .

The combat readiness of any unit —platoon, battalion, or division— is the sum total of you and your equipment—and the man next to you, and his, and all out the line.

You're a VIP–

That's where you come in. The Army's "traffic-light" concept of Equipment Serviceability Criteria (ESC) makes you a VIP in a reporting system that influences command decisions all the way to the top. You flash the word.

How? Well, by using the ESC, you check your tank (or other major item) to see if it's *green, amber* or *red*. What's that? We'll get into that in a minute, but for now, let's look at the *why* of the system—and explore the *how* later. While you're measuring the traffic-light condition of your equipment, the other guys in your outfit are doing the same.

Know Your "Traffic Light" Pubs

GREEN - AMBER - RED

"Can we accomplish this, Mr. Secretary?"

"Will your Division meet this requirement, General?"

"Is the 1st Brigade ready, Colonel?"

"Can your battalion swing it, Colonel?"

"Are you positive, Captain?"

"Can you be sure, Lieutenant?"

"Is your tank green, amber, or red, Sergeant?"

There's a big difference and a lot of distance between all of those questions—but the answer to all of them starts off with the last one. The answer you give, about your tank, or jeep, or howitzer or what-haveyou, will influence what the man tells The Man who reports to THE MAN, who . . .

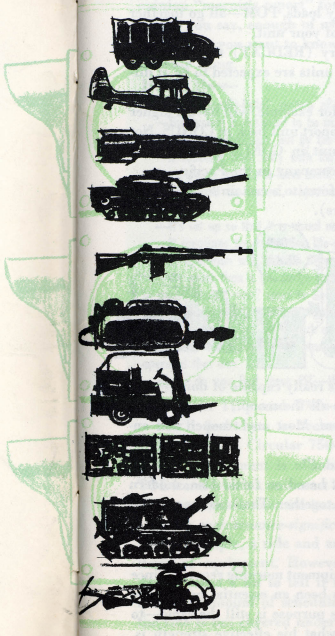
The combat readiness of any unit —platoon, battalion, or division— is the sum total of you and your equipment—and the man next to you, and his, and all out the line.

You're a VIP—

That's where you come in. The Army's "traffic-light" concept of Equipment Serviceability Criteria (ESC) makes you a VIP in a reporting system that influences command decisions all the way to the top. You flash the word.

How? Well, by using the ESC, you check your tank (or other major item) to see if it's *green, amber* or *red*. What's that? We'll get into that in a minute, but for now, let's look at the *why* of the system—and explore the *how* later. While you're measuring the traffic-light condition of your equipment, the other guys in your outfit are doing the same.

The Color Your Equipment Flashes Goes Right to the Top



PS

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from U. S. Army Maintenance Board, Attn.: PS Magazine, Fort Knox, Kentucky 40121.

THE **PREVENTIVE MAINTENANCE** MONTHLY

Issue No. 136 1964 Series

IN THIS ISSUE

FIREPOWER 6-17

Nike-Hercules 9-11
Davy Crockett 11
Tape Talk 12-14
Armorer's Tool Kit 6-8
M108, M109 15
Firing Scales 16
M37C 17

AIR MOBILITY 18-27

Rotor Blades 18-22
Huey (UH-1A) 22
Sioux (OH-13) 24-25
L-19 26
Choctaw (CH-34) 26
Aircraft Pubs 27

GROUND MOBILITY 37-45

Hinge Lube 37
Warning Light 38
Heater FSN 42
Hood Safety 43
Cable Care 45
M151 40, 43
M37 40, 41
M35A1 41
M125 42
Don't Mix Fuel 44

COMMUNICATIONS 46-56

BB-421 46-48
TS-1334/URM-125 49
AN/PMQ-6 49
AN/MPQ-4A 50
PU-107/U 51
AN/TPS-25 51
Hot Tubes 52
AN/VRC-12 53
AN/TCC-7 54
Camera Tips 55
AN/PFP-1 56

GENERAL AND SUPPLY

New Publications 28
Radiator Hoses 57
Spark Arrestor 58
Spray Lacquer 59
Forklift Bolt 59
Patch-up Paint 60
Handy Pub 60
Soldering Gun 61
Waterproof 61
Fuel Coveralls 62
Demand Data 63
Inflator Gage 64
Supply 6, 11, 16, 17, 18, 26, 27, 37, 40, 42, 45, 47, 51

Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 4 April 1962. DISTRIBUTION: In accordance with requirements submitted on DA Form 12-4.

PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

Sgt. Half-Mast,
PS Magazine,
Fort Knox, Ky.
40121

The Color Your Equipment Flashes Goes Right to the Top

Published by the Department of the Army for the Information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from U. S. Army Maintenance Board, Attn.: PS Magazine, Fort Knox, Kentucky 40121.

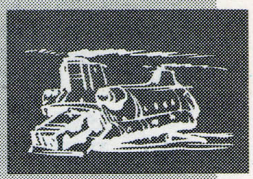
THE **PREVENTIVE MAINTENANCE** MONTHLY

Issue No. 136 1964 Series

IN THIS ISSUE

FIREPOWER 6-17

Nike-Hercules 9-11
Davy Crockett 11
Tape Talk 12-14
Armorer's Tool Kit 6-8
M108, M109 15
Firing Scales 16
M37C 17

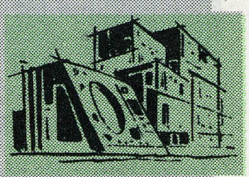


AIR MOBILITY 18-27

Rotor Blades 18-22
Huey (UH-1A) 22
Sioux (OH-13) 24-25
L-19 26
Choctaw (CH-34) 26
Aircraft Pubs 27

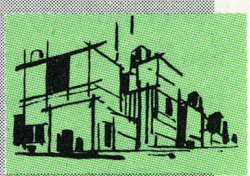
GROUND MOBILITY 37-45

Hinge Lube 37
Warning Light 38
Heater FSN 42
Hood Safety 43
Cable Care 45
M151 40, 43
M37 40, 41
M35A1 41
M125 42
Don't Mix Fuel 44



COMMUNICATIONS 46-56

BB-421 46-48
TS-1334/URM-125 49
AN/PMQ-6 49
AN/MPQ-4A 50
PU-107/U 51
AN/TPS-25 51
Hot Tubes 52
AN/VRC-12 53
AN/TCC-7 54
Camera Tips 55
AN/PFP-1 56



GENERAL AND SUPPLY

New Publications 28
Radiator Hoses 57
Spark Arrestor 58
Spray Lacquer 59
Forklift Bolt 59
Patch-up Paint 60
Handy Pub 60
Soldering Gun 61
Waterproof 61
Fuel Coveralls 62
Demand Data 63
Inflator Gage 64
Supply 6, 11, 16, 17, 18, 26, 27, 37, 40, 42, 45, 47, 51

Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 4 April 1962. DISTRIBUTION: In accordance with requirements submitted on DA Form 12-4.

PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

Sgt. Half-Mast,
PS Magazine,
Fort Knox, Ky.
40121

When you're all finished, your CO can quickly total the amount of *green, amber* or *red* equipment in the whole outfit.

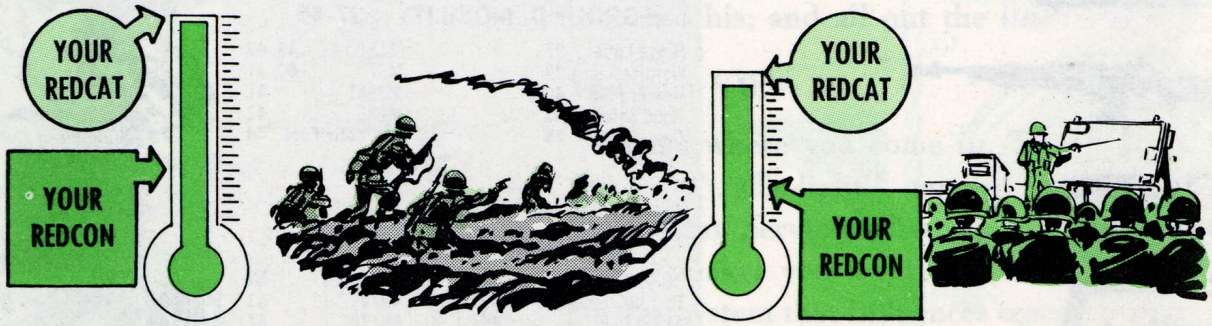
REDCON . . . REDCAT–

Your commander includes that in a Unit Readiness Report to higher headquarters. There's lots more to it than the equipment profile—per cent of TOE strength, training status, critical MOS strength, ATT results, IG report, CMMI results, technical proficiency inspections, participation in major field exercises, specialized training, presence of prescribed supply loads, POM—all go together to measure the Readiness Condition (REDCON) of your unit.

This is measured against the Readiness Category (REDCAT) that has been assigned to your outfit. Under REDCAT, different units are expected to be at different stages of readiness.

A line company sitting on a border someplace, for example, will have a higher REDCAT expectation than a newly organized support unit back in CONUS. Not to low-rate CONUS outfits, though—a STRAC unit in CONUS might have a higher REDCAT assignment than a similar tank company in the Pacific.

REDCAT says: Your outfit is expected to perform to a certain level of TOE mission—for a certain amount of days (or hours).



REDCON is the measure of what your outfit is really capable of doing—and how long it can continue to do it. (AR 220-1 has all the scoop.)

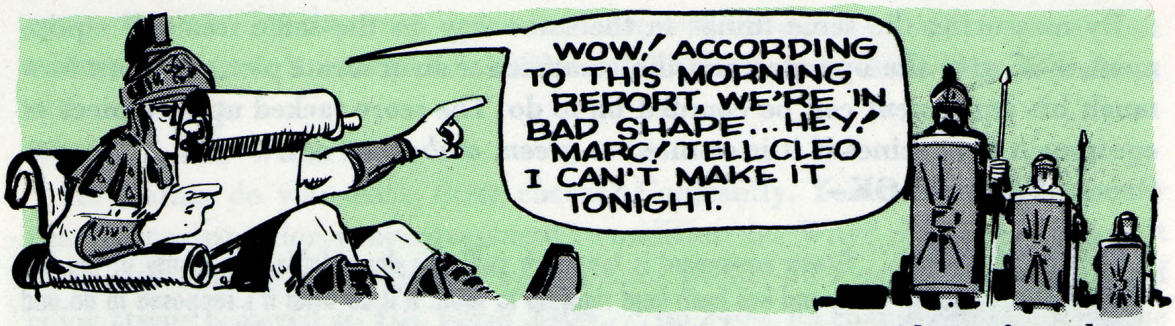
The measuring of readiness is a tricky business. Most any trooper will answer quickly: "I'm ready, and so's my gear!"

The first reaction of any commander is: "Can do!"

But enthusiasm is tricky, and emotions are not based on facts. Also, modern warfare demands dependable equipment and men, together. That's where you and the ESC enter the unit profile picture.

Like a "Morning Report"–

One way of looking at it is to consider it an "equipment morning report." Since the days of Julius Caesar, the morning report has been an essential part of the information that influences command decisions. Its purpose is still the same—to tell the commander what his losses have been, what his effective strength is, and what kind of a chore he can cut out for himself for that day—with a reason-



able expectation of accomplishing it. The ESC system provides a factual, no-opinion "morning report" for the equipment in a unit.

OK, you say, enough of *why* we have it and *what* it is! If you're the man who has to do it you want to know *how!*

Come along.

Here's How—

The ESC "traffic-light" system of evaluating equipment readiness is based on these points:

—The system is designed to be used by you, the operator or crew—not specially trained mechanics or technicians, but by the men who use it all the time, every day.

—It concerns itself only with the equipment's ability to perform its combat mission—not spit-and-polish or nice-to-have stuff.

—It's based on factual, objective, measurable factors. No squint-at-the-ceiling, blue-sky opinions.

—It's set up so that it is visual and simple, requiring no tear-down.

—It measures the remaining life-capacity of the equipment to continue performance in a 90-day operation with normal organizational maintenance.

—It's more than a go, no-go system—it recognizes the fact that equipment does not have to meet "factory-new" specs to be combat-reliable.

—It proves your equipment works . . . 'cause you've got to actually give it an operational check (like a road test for a truck or tank) before you can say "green" or "red." Of course you don't have to operate your equipment especially for an ESC check, if it's already being operated that day.

Where do you find these ESC—these questions that you ask your equipment about itself?

They're in TB's and TM's—

You'll find them in technical bulletins and changes to users' TM's. (See AR 750-10 and DA Circular 750-11.)

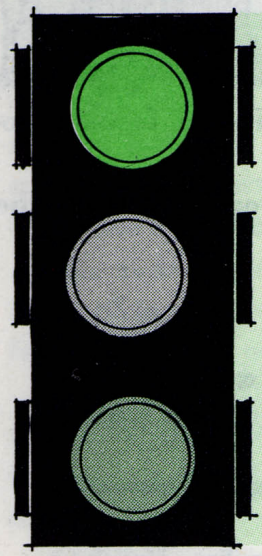
What equipment is measured this way? ESC have been developed for those TOE items which a unit must have to do its job—*mission-essential.* But it is limited to those mission-essential items which also have a big impact on maintenance activities—*maintenance-significant.*

For example, a rifle and an artillery piece both are certainly *mission-essential* items of equipment. However, the rifle (as compared to the artillery piece) doesn't need a lot to tell if it's combat dependable. And it doesn't need the kind and amount of scheduled maintenance that the artillery piece needs. So, the rifle is not covered under ESC but the artillery piece is—it's considered to be a mission-essential maintenance-significant weapon.

PS MORE

By measuring the same things in the same way on the same items of equipment, ESC give the operator and the commander an accurate picture of just how much his equipment can be counted on to do. The score racked up by a piece of equipment determines if it is counted as *green, amber, or red.*

Green—You're A-OK—



Green equipment is top-notch stuff. It's dependable, has plenty of life left in it, and has been kept right up to snuff. It'll do what it's supposed to do and you can count on its continuing to perform for a good while.

Amber equipment, too, is fully operational. This equipment will shoot, move, and communicate, just like the **green,** but it won't have the same amount of reliability left in it. In other words, you can start out with it but the odds are against its completing a 90-day campaign without needing quite a bit of maintenance.

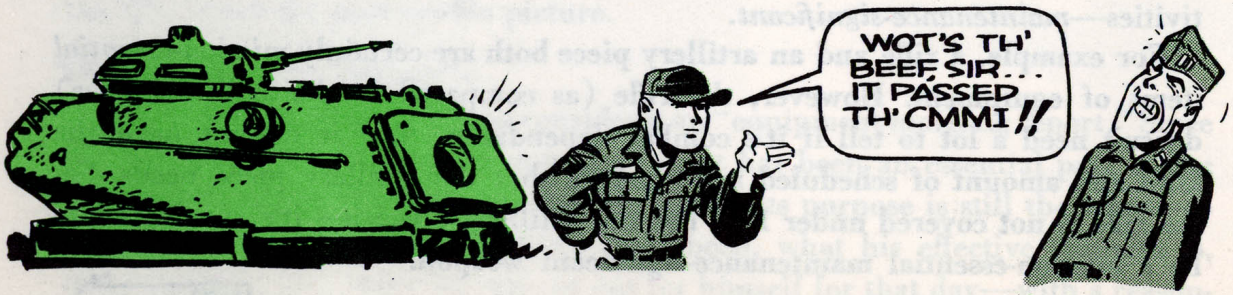
Equipment can be **red** for a number of reasons. If your unit doesn't have it, it's **red** (TOE shortages). If it doesn't move, shoot, or communicate, or whatever it's supposed to do, it's **red.** If there's an **urgent** MWO that hasn't been applied, it's **red.** If it's limited standard or obsolete, it's **red.**

Also, a missing or nonworking essential part—like a ballistic computer, can make the entire item *red.*

Due-Outs Won't Shoot—

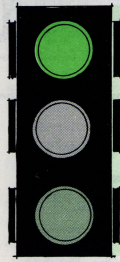
Never confuse the ESC checks with the CMMI. The CMMI is a maintenance inspection: ESC is a performance check. The only tie between them is that good maintenance usually makes for good performance.

A truck with a horn gone or a cracked windshield or missing mirror might flunk out on a CMMI—yet it could still stand way high in the *green* column. On the other hand, a tank with its main gun in the shop might be perfectly covered,



By measuring the same things in the same way on the same items of equipment, ESC give the operator and the commander an accurate picture of just how much his equipment can be counted on to do. The score racked up by a piece of equipment determines if it is counted as *green, amber, or red.*

Green—You're A-OK—



Green equipment is top-notch stuff. It's dependable, has plenty of life left in it, and has been kept right up to snuff. It'll do what it's supposed to do and you can count on its continuing to perform for a good while.

Amber equipment, too, is fully operational. This equipment will shoot, move, and communicate, just like the **green**, but it won't have the same amount of reliability left in it. In other words, you can start out with it but the odds are against its completing a 90-day campaign without needing quite a bit of maintenance.

Equipment can be **red** for a number of reasons. If your unit doesn't have it, it's **red** (TOE shortages). If it doesn't move, shoot, or communicate, or whatever it's supposed to do, it's **red.** If there's an **urgent** MWO that hasn't been applied, it's **red.** If it's limited standard or obsolete, it's **red.**

Also, a missing or nonworking essential part—like a ballistic computer, can make the entire item *red.*

Due-Outs Won't Shoot—

Never confuse the ESC checks with the CMMI. The CMMI is a maintenance inspection: ESC is a performance check. The only tie between them is that good maintenance usually makes for good performance.

A truck with a horn gone or a cracked windshield or missing mirror might flunk out on a CMMI—yet it could still stand way high in the *green* column. On the other hand, a tank with its main gun in the shop might be perfectly covered,

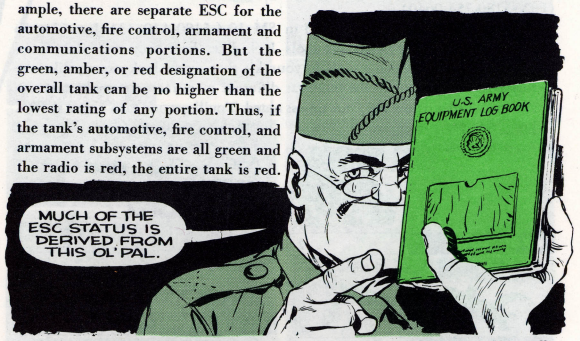
paperwise, with all the work orders and requisitions that a CMMI requires—but without that gun, it wouldn't be COMBAT-READY under ESC. You can't shoot with a due-out.

When . . . Oh, When?

How often do you make these checks? Constantly. You have to know at any time just what color your equipment's condition is. Why? Because your unit commander has to know his unit's equipment profile on a daily basis. Change of color status is keyed to DA Form 2404 . . . no 2404, no change. The dope on the 2404 will show if a color change is needed.

You keep your eyes open all the time you're operating so you can tell your commander or record in the log book anything that goes wrong or affects your equipment's traffic light color.

Also, each subsystem of a major item is graded separately. On a tank, for example, there are separate ESC for the automotive, fire control, armament and communications portions. But the green, amber, or red designation of the overall tank can be no higher than the lowest rating of any portion. Thus, if the tank's automotive, fire control, and armament subsystems are all green and the radio is red, the entire tank is red.



Another big clue to keep pasted in the back of your noggin is that this traffic-light system of ESC makes the accuracy and completeness of your log books more important than ever before. Why? Why, because once you go to applying these ESC you will find that the answers to many, many of the questions—in some instances almost half of them—will be information that comes right out of your log book.

Remember—the ESC traffic-light system is a no-nonsense method of providing sound, factual information that will be used in connection with critical tactical and strategic decisions by the Commander-in-Chief, on down.

That's a powerful pencil you have in your hand—you've got to use it right.

END

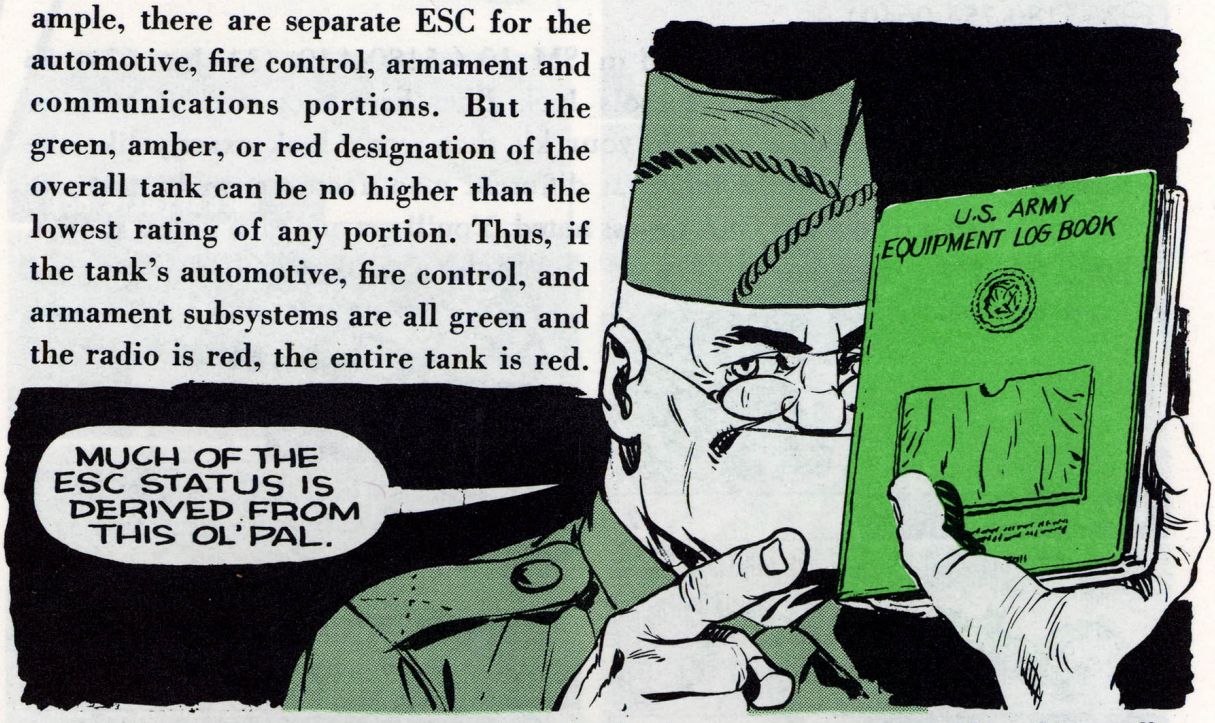
paperwise, with all the work orders and requisitions that a CMMI requires—but without that gun, it wouldn't be COMBAT-READY under ESC. You can't shoot with a due-out.

When . . . Oh, When?

How often do you make these checks? Constantly. You have to know at any time just what color your equipment's condition is. Why? Because your unit commander has to know his unit's equipment profile on a daily basis. Change of color status is keyed to DA Form 2404 . . . no 2404, no change. The dope on the 2404 will show if a color change is needed.

You keep your eyes open all the time you're operating so you can tell your commander or record in the log book anything that goes wrong or affects your equipment's traffic light color.

Also, each subsystem of a major item is graded separately. On a tank, for example, there are separate ESC for the automotive, fire control, armament and communications portions. But the green, amber, or red designation of the overall tank can be no higher than the lowest rating of any portion. Thus, if the tank's automotive, fire control, and armament subsystems are all green and the radio is red, the entire tank is red.

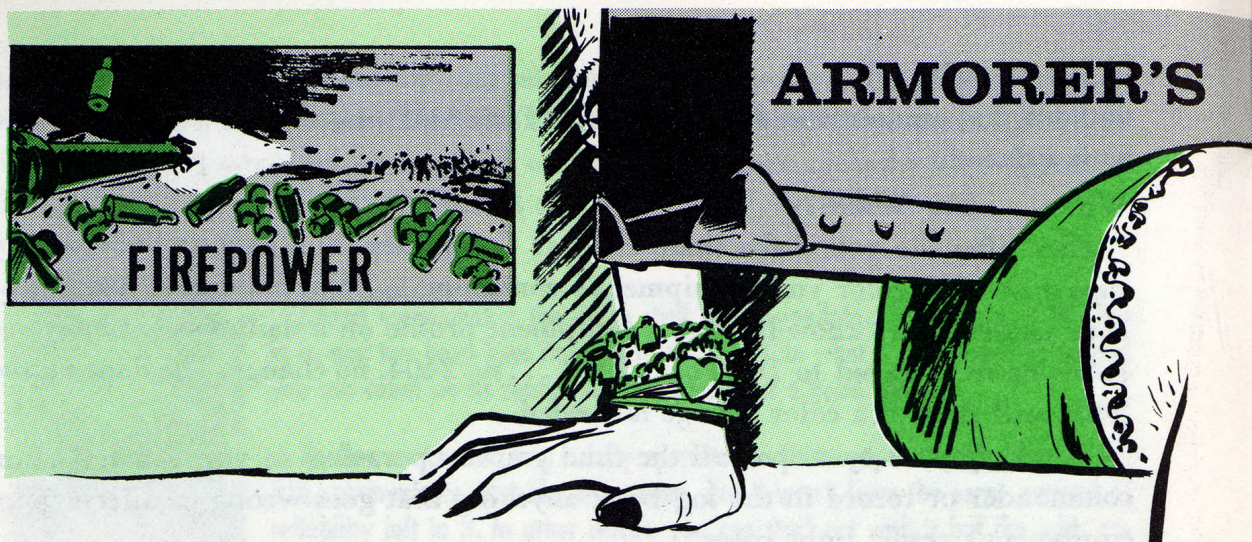


Another big clue to keep pasted in the back of your noggin is that this traffic-light system of ESC makes the accuracy and completeness of your log books more important than ever before. Why? Why, because once you go to applying these ESC you will find that the answers to many, many of the questions—in some instances almost half of them—will be information that comes right out of your log book.

Remember—the ESC traffic-light system is a no-nonsense method of providing sound, factual information that will be used in connection with critical tactical and strategic decisions by the Commander-in-Chief, on down.

That's a powerful pencil you have in your hand—you've got to use it right.

PS END



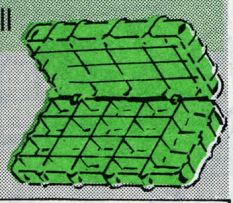
ARMORER'S

Where'd it go? That's the question that's been buggin' some of you. Seems like some people have been having trouble locating the Armorer's Tool Kit (FSN 5180-754-0640).

To help you a bit, it's now found in SM 10-4-5180-A19 (31 Jan 62). So you'll have an idea of what the tools look like, here they are. Remember though, you may have some tools in your kit that won't look exactly like the picture here. That's due to the fact that different manufacturers make them.

The tools listed below are GSA unless noted. You'll get one each unless shown.

BOX, SPARE PARTS: transparent, 1¼-in h x 4¼-in w x 7¼-in lg overall



FSN 5140-449-6851 — 2

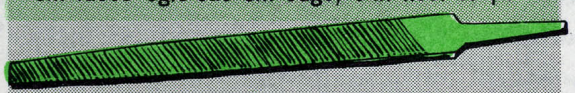
CAPS, VISE JAW: cop. face, for 2-in jaws

FSN 5120-250-4747

DRIFTPIN: sgle taper, ¼-in largest dia, 4-in lg overall

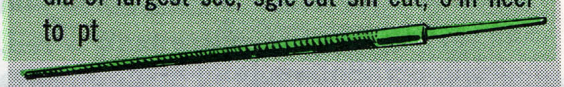
FSN 5120-239-0035

FILE, HAND: American patt, fl type, dble cut sm faces sgle-cut sm edge, 6-in heel to pt



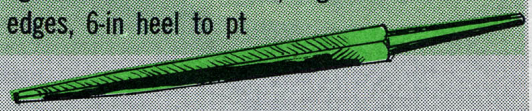
FSN 5110-234-6532

FILE, HAND: American patt, rd type, 15/64-in dia of largest sec, sgle-cut sm cut, 6-in heel to pt



FSN 5110-234-6550

FILE, HAND: American patt, slim taper type, sgle-cut handsaw faces, sgle-cut handsaw edges, 6-in heel to pt

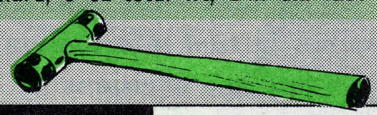


FSN 5110-234-6528

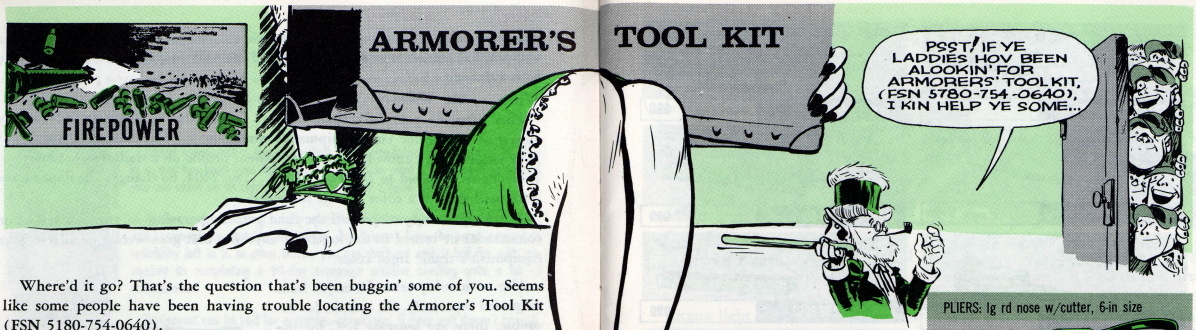
HAMMER, HAND: machinist's ball peen, 4 oz hd wt

FSN 5120-243-2985

HAMMER, HAND: screw-in inserted plastic face, med hard, 5 oz total wt, 1-in dia face



FSN 5120-357-6074



Where'd it go? That's the question that's been buggin' some of you. Seems like some people have been having trouble locating the Armorer's Tool Kit (FSN 5180-754-0640).

To help you a bit, it's now found in SM 10-4-5180-A19 (31 Jan 62). So you'll have an idea of what the tools look like, here they are. Remember though, you may have some tools in your kit that won't look exactly like the picture here. That's due to the fact that different manufacturers make them.

The tools listed below are GSA unless noted. You'll get one each unless shown.

BOX, SPARE PARTS: transparent, 1¼-in h x 4¼-in w x 7¼-in lg overall

FSN 5140-449-6851 — 2

CAPS, VISE JAW: cop. face, for 2-in jaws

FSN 5120-250-4747

DRIFTPIN: sgle taper, ¼-in largest dia, 4-in lg overall

FSN 5120-239-0035

FILE, HAND: American patt, fl type, dble cut sm faces sgle-cut sm edge, 6-in heel to pt

FSN 5110-234-6532

FILE, HAND: American patt, rd type, 15/64-in dia of largest sec, sgle-cut sm cut, 6-in heel to pt

FSN 5110-234-6550

FILE, HAND: American patt, slim taper type, sgle-cut handsaw faces, sgle-cut handsaw edges, 6-in heel to pt

FSN 5110-234-6528

HAMMER, HAND: machinist's ball peen, 4 oz hd wt

FSN 5120-243-2985

HAMMER, HAND: screw-in inserted plastic face, med hard, 5 oz total wt, 1-in dia face

FSN 5120-357-6074

HAMMER, HAND: soft br hd, 3 oz total wt

FSN 5120-242-3908

HANDLE, FILE, WOOD: 4⅝-in lg overall x 1⅝-in dia overall, incl expanding S jaws w/knurled adj cap

FSN 5110-595-8325 — 3

KEY, SOCKET HEAD SCREW: hex type, L-type hdl

	W Across Flats, In	Nom Lg Arm Length, In
FSN 5120-198-5398	1/16	1-3/4
FSN 5120-293-1476	1/16	2-27/32
FSN 5120-240-5292	1/8	2-1/4
FSN 5120-198-5392	5/32	2-1/2
FSN 5120-240-5300	3/16	2-3/4
FSN 5120-240-5274	5/16	3-3/4

OILER, HAND: 4 oz cap., force fed by pressure created by an int pump, 1 13/16-in bottom dia, 6-in lg S spout, male thd bottom end, w/ closure cap

FSN 4930-540-6601 — QM

PLIERS: lg rd nose w/cutter, 6-in size

FSN 5120-247-5177

PLIERS: parallel action jaws w/cutter, 6½-in size

FSN 5120-224-1541

PLIERS, SLIP JOINT: angle nose, multiple tongue & groove, 8-in size

FSN 5120-278-0351

PUNCH, CENTER, SOLID: 5/32-in dia at top of tapd pt, ⅜-in stk, 4-in lg overall

FSN 5120-293-3509

PUNCH, DRIVE PIN: stght type, ¼-in lg x 0.030-in dia pt

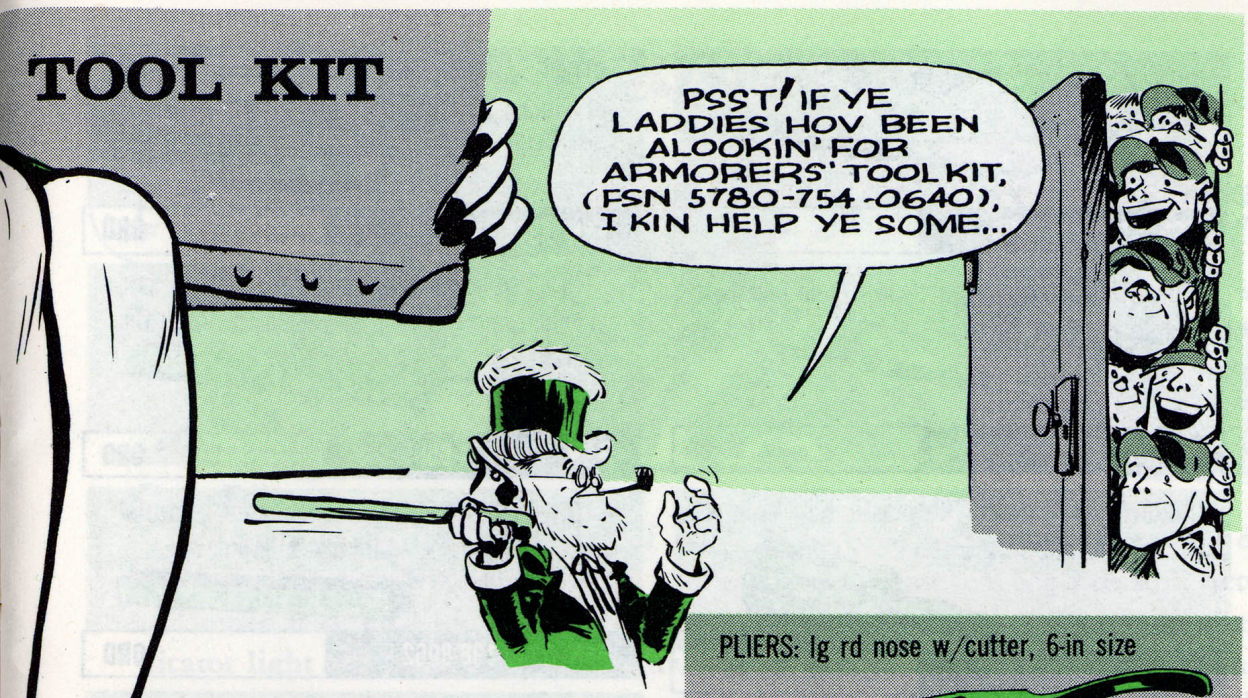
FSN 5120-223-1019 — 4

PUNCH, DRIVE PIN: stght type, ⅜-in lg x 0.050-in dia pt

FSN 5120-555-1425

PS MORE

TOOL KIT



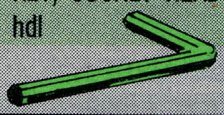
HAMMER, HAND: soft br hd, 3 oz total wt

FSN 5120-242-3908

HANDLE, FILE, WOOD: 4⅝-in lg overall x 1 5/16-in dia overall, incl expanding S jaws w/knurled adj cap

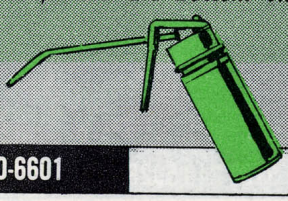
FSN 5110-595-8325 — 3

KEY, SOCKET HEAD SCREW: hex type, L-type hdl



	W Across Flats, In	Nom Lg Arm Length, In
FSN 5120-198-5398	1/16	1-3/4
FSN 5120-293-1476	1/16	2-27/32
FSN 5120-240-5292	1/8	2-1/4
FSN 5120-198-5392	5/32	2-1/2
FSN 5120-240-5300	3/16	2-3/4
FSN 5120-240-5274	5/16	3-3/4

OILER, HAND: 4 oz cap., force fed by pressure created by an int pump, 1 15/16-in bottom dia, 6-in lg S spout, male thd bottom end, w/ closure cap

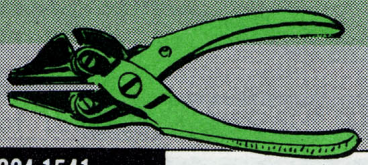


FSN 4930-540-6601 — QM

PLIERS: lg rd nose w/cutter, 6-in size

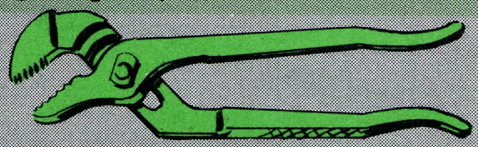
FSN 5120-247-5177

PLIERS: parallel action jaws w/cutter, 6½-in size



FSN 5120-224-1541

PLIERS, SLIP JOINT: angle nose, multiple tongue & groove, 8-in size



FSN 5120-278-0351

PUNCH, CENTER, SOLID: 5/32-in dia at top of tapd pt, ⅜-in stk, 4-in lg overall

FSN 5120-293-3509

PUNCH, DRIVE PIN: stght type, ¼-in lg x 0.030-in dia pt

FSN 5120-223-1019 — 4

PUNCH, DRIVE PIN: stght type, ⅜-in lg x 0.050-in dia pt

FSN 5120-555-1425

P.S. MORE

PUNCH, DRIVE PIN: stght type, 11/16-in lg x 3/32-in dia pt

FSN 5120-242-3435

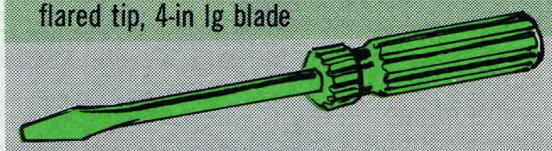
PUNCH, DRIVE PIN: stght type, 1½-in nominal length pt, 1/16-in dia pt

FSN 5120-752-9030

SCREWDRIVER, FLAT TIP: plastic hdl, ¼-in w flared tip, 1½-in lg blade

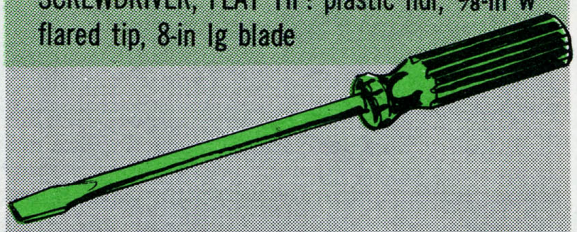
FSN 5120-618-2699

SCREWDRIVER, FLAT TIP: plastic hdl, ¼-in w flared tip, 4-in lg blade



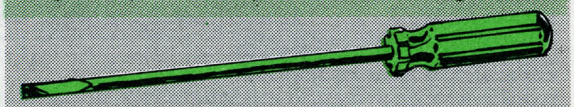
FSN 5120-222-8852

SCREWDRIVER, FLAT TIP: plastic hdl, 3/8-in w flared tip, 8-in lg blade



FSN 5120-237-6985

SCREWDRIVER, FLAT TIP: plastic hdl, plain, light duty, 3/16-in w stght sided tip, 5-in lg blade



FSN 5120-278-1270

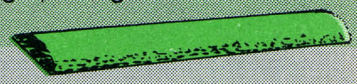
SCREWDRIVER, FLAT TIP: plastic hdl w/pocket clip, 1/8-in w flared nonmagnetic tip, 2-in lg blade

FSN 5120-236-2140

STONE, SHARPENING: abrasive syn, al-oxide or silicon carbide, oil-treated, fine grit, 4-in lg x 3/8-in w x 3/8-in thk

FSN 5345-584-4605 ORD

STONE, SHARPENING: unmounted, half-rd, syn, al-oxide, fine grit, 4-in lg x 3/8-in w x 3/16-in thk overall

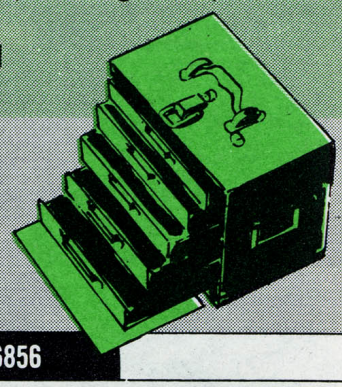


FSN 5345-224-6595 ORD

STONE, SHARPENING: unmounted, natural hard, 3½-in lg x ¼-in thk x ¼-in w

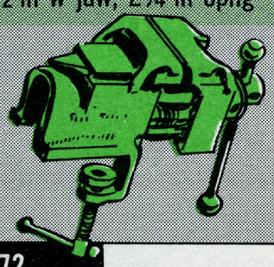
FSN 5345-198-8062 ORD

TOOL BOX, MACHINIST'S: S cntr fin & painted color no. 3412, 16-in lg x 8½-in w x 10¾-in h excel projections, five drawers, w/panel front, lkg facilities incl, non-integral lock, two additional handles located in sides



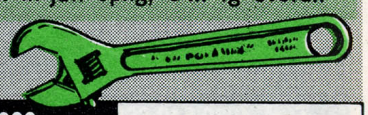
FSN 5140-449-6856

VISE, BENCH, CLAMP BASE: stationary type, w/anvil back, 2½-in w jaw, 2¼-in opng



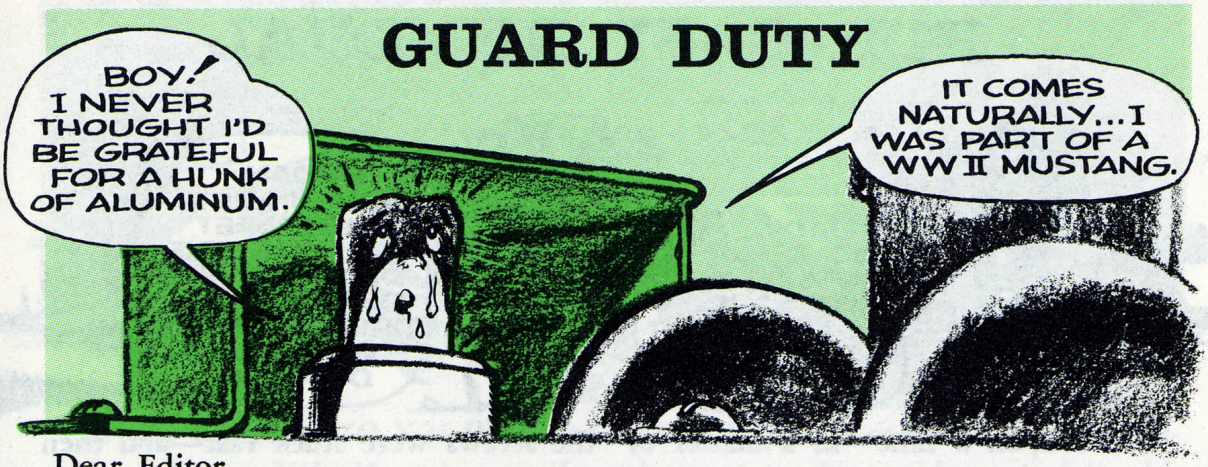
FSN 5120-243-1372

WRENCH, OPEN END, ADJUSTABLE: sgle-hd type, 0 to 0.947-in jaw opng, 8-in lg overall



FSN 5120-240-5328

GUARD DUTY



Dear Editor,

We were really having a time of it for a spell in our Nike-Herc outfit.

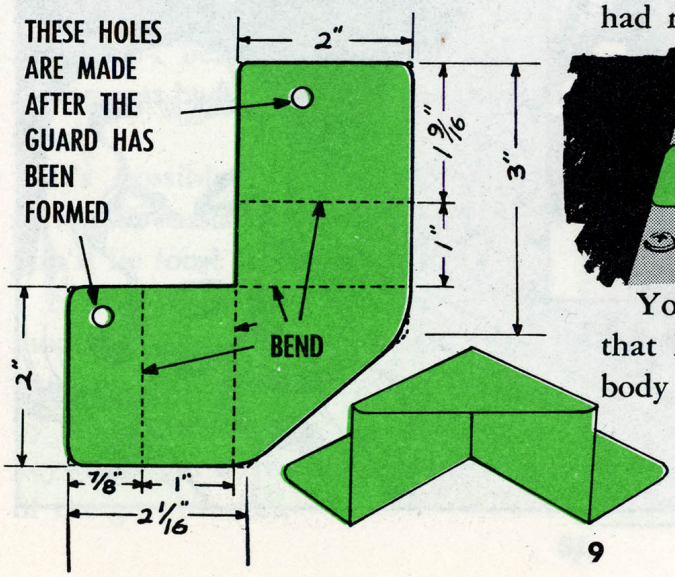
I mean it seemed like the power indicator light on the pre-launcher signal simulator would hit on something and break whenever the simulator was moved to and from the launcher.

But we licked the problem—with a sheet of aluminum 3/32 inch thick. You can use a sheet of less thickness if that's what your scrounging gets you.

The idea is to make a guard for the light. And it doesn't take much doing.

The first thing you do is make measurements on the sheet of aluminum the way you see in the picture.

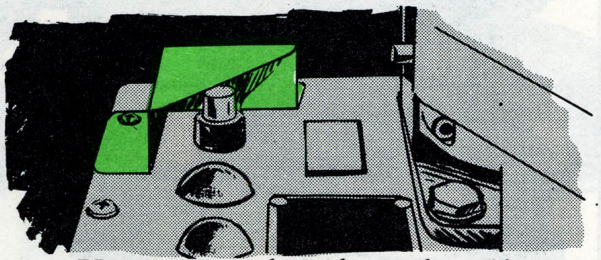
Put 90-degree bends in the aluminum until it takes this shape.



Those two holes don't have any dimensions beside 'em for a reason. Actually . . . your best bet is to make them after you've formed the guard. That way, you can be sure the holes in the guard line up with those in the simulator in case you're a little off with your bending.

The best way to measure for the holes is to take the two bolts out of the corner of the simulator . . . put the guard on top of 'em . . . and come up through the bottom of the holes on the simulator with a pencil to mark circles on the guard.

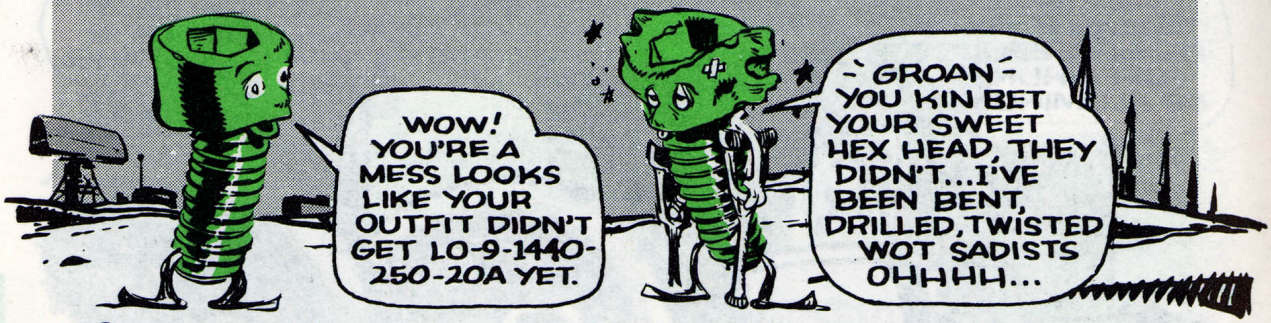
Once the holes are made in the guard, you can fasten it in place by putting back the nuts, bolts and washers you had removed from the simulator.



You can see that about the only way that light's gonna break is for somebody to do it on purpose.

CWO Robert E. Coover
Btry A, 5th Msl Bn, 517th Arty
Abilene, Texas

FOR EASY REMOVAL



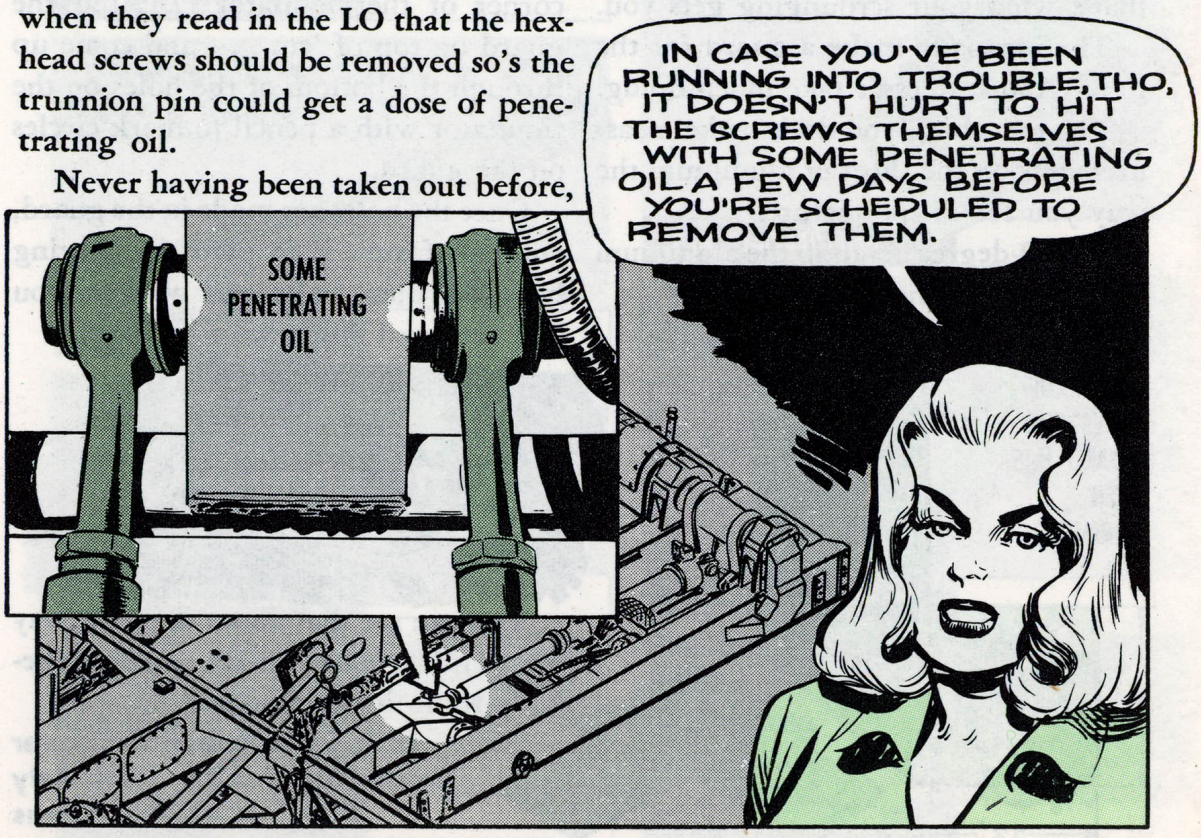
Once upon a time—as a matter of fact—it was before the latest (Apr 62) LO 9-1440-250-20A hit the scene.

Anyway . . . it used to was that there wasn't any scoop in the old (Apr 59) LO about removing the two hex-head screws in your Nike-Hercules launcher's erecting beam cylinder assembly. So the trunnion pin never got touched with penetrating oil the way it says in the latest LO.

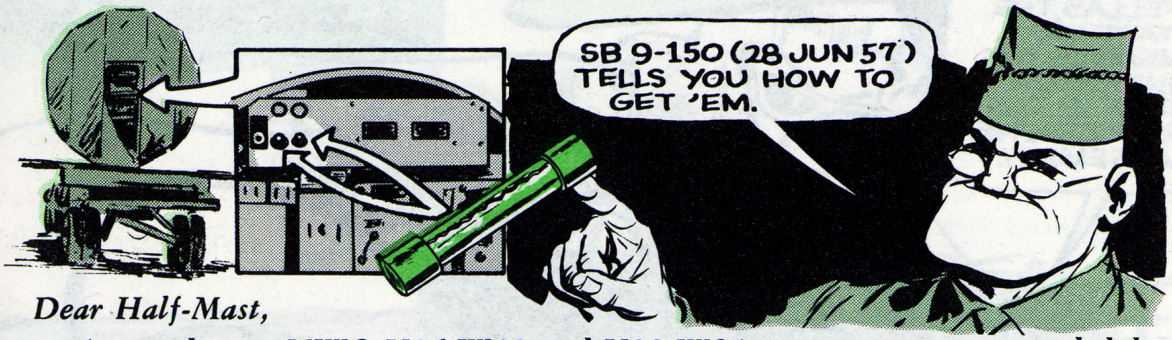
Some outfits really had a time of it when they read in the LO that the hex-head screws should be removed so's the trunnion pin could get a dose of penetrating oil.

Never having been taken out before, the screws were stuck fast—and then some. The screws would get so stubborn they'd split or maybe break up as pressure was applied with the wrench. Then followed telephone calls to the support unit for help in getting what was left of the screws out—usually with a drill.

Now that you're removing the screws once a month to get at the trunnion pins, the screws shouldn't be giving you any trouble.



FUSE CAN BE HAD



Dear Half-Mast,

As you know, MWO Y26-W19 and Y39-W24 puts a compressor and dehumidifier in our Nike-Hercules missile and target tracking radars. And it adds five fuses to each radar—three .8-amp jobs for the compressor and two 1.5-amp fuses for the dehumidifier.

The authority for requisitioning the .8-amp fuses we have, but just how do we latch on to those 1.5-amp fuses?

SFC H. C.

Dear Sergeant H. C.,

That 1.5-amp fuse, Type FO2A250V1-½A, FSN 5920-050-4953, is listed in TM 9-1430-250-12P/4/1 and TM 9-1430-250-12P/9/1. And you'll be seeing it in changes to TM 9-1430-250-12P/3/1 . . . -12P/7/1 and -12P/8/1.

Of course, if the fuse wasn't in any TM, the idea would have been to get hold of what you need the way it tells you in SB 9-150 (28 Jun 57).

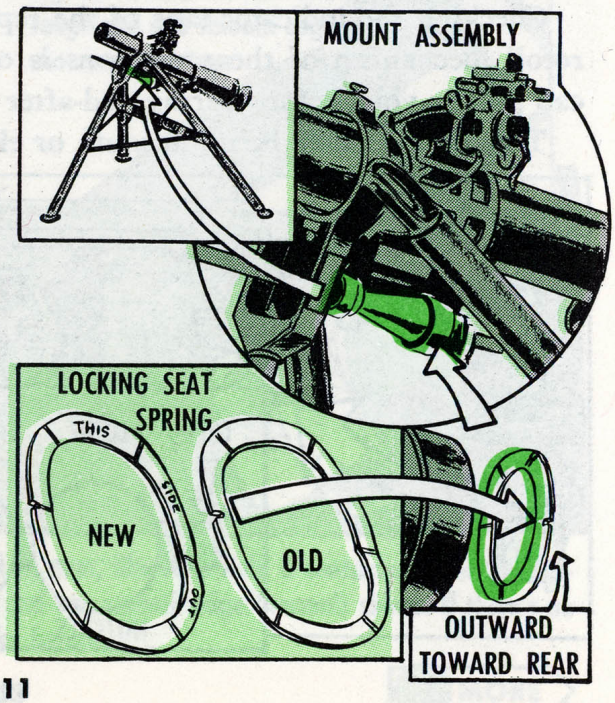
Half-Mast

YOU'D BETTER BELIEVE THIS!

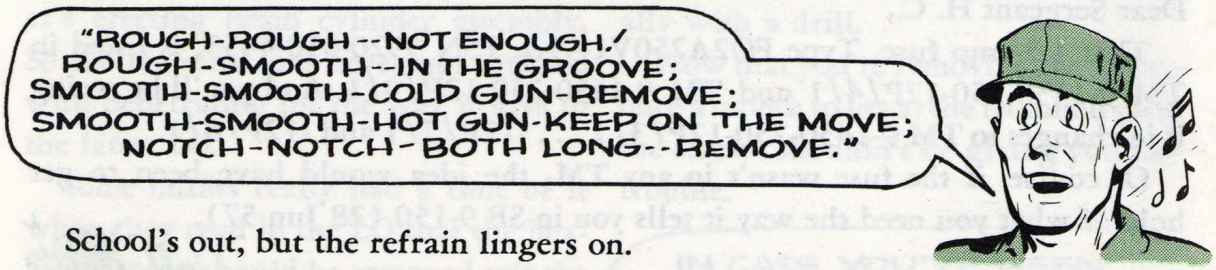
Next time you're field stripping the 20-mm spotting gun (M69) on your Davy Crockett, look for the sign THIS SIDE OUT before you put the locking spring seat back. And do what the sign says.

It's possible, y'know, to put the spring in bassackwards. Only then the gun'll lie loose in its bracket.

Now, if you have one of the older models—they don't have this sign—you can still get the spring in right by facing the lift or wave in which the keyway is cut outward toward the rear of the gun bracket.



Remember this tanker's sing-song from armor-charmer school days?

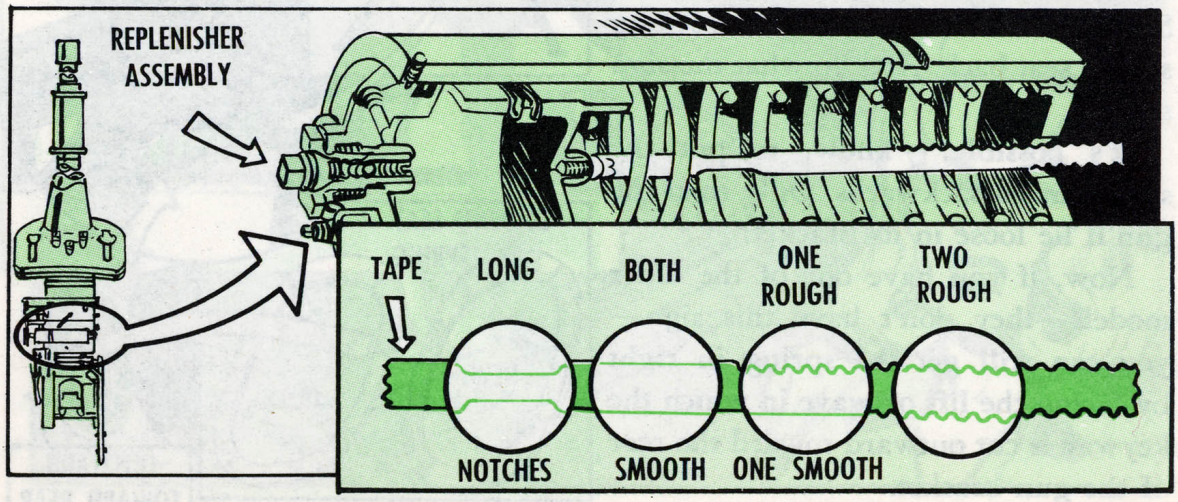


School's out, but the refrain lingers on.

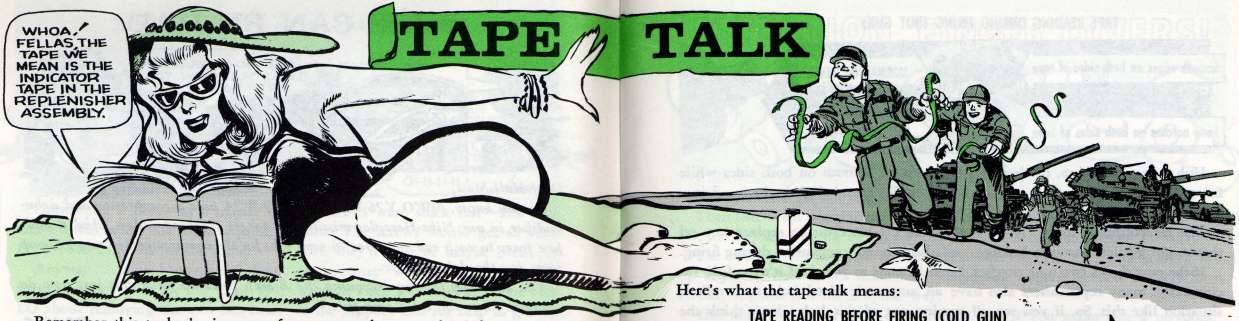
Every smart operator—whether he's dealing in bathing beauties, stocks 'n' bonds or tank-mounted and self-propelled guns—knows how to use a tape. What's more, he knows what to do about what he reads.

Checking the indicator tape of the replenisher assembly on the hydro-spring recoil mechanism of these weapons is one of the mostest kinds of "musts" you can pull in your before-during-and-after firing inspections.

The oil level must be up to snuff, or else . . .



TAPE TALK



Remember this tanker's sing-song from armor-charmer school days?

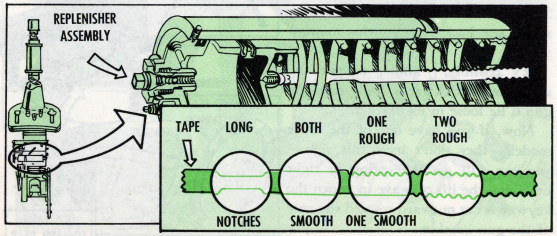
"ROUGH-ROUGH--NOT ENOUGH./
ROUGH-SMOOTH--IN THE GROOVE;
SMOOTH-SMOOTH-COLD GUN-REMOVE;
SMOOTH-SMOOTH-HOT GUN-KEEP ON THE MOVE;
NOTCH-NOTCH-BOTH LONG--REMOVE."

School's out, but the refrain lingers on.

Every smart operator—whether he's dealing in bathing beauties, stocks 'n' bonds or tank-mounted and self-propelled guns—knows how to use a tape. What's more, he knows what to do about what he reads.

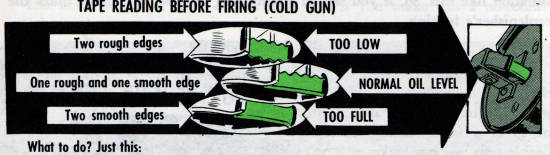
Checking the indicator tape of the replenisher assembly on the hydro-spring recoil mechanism of these weapons is one of the mostest kinds of "musts" you can pull in your before-during-and-after firing inspections.

The oil level must be up to snuff, or else . . .



Here's what the tape talk means:

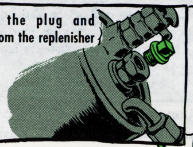
TAPE READING BEFORE FIRING (COLD GUN)



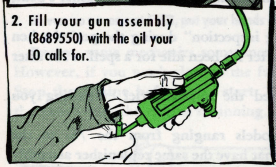
What to do? Just this:

If the tape indicates the oil's too low, add oil till the level's normal, like so:

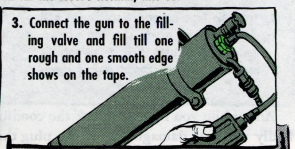
1. Remove the plug and washer from the replenisher assembly.



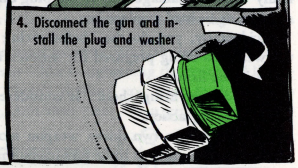
2. Fill your gun assembly (8689550) with the oil your LO calls for.



3. Connect the gun to the filling valve and fill till one rough and one smooth edge shows on the tape.



4. Disconnect the gun and install the plug and washer



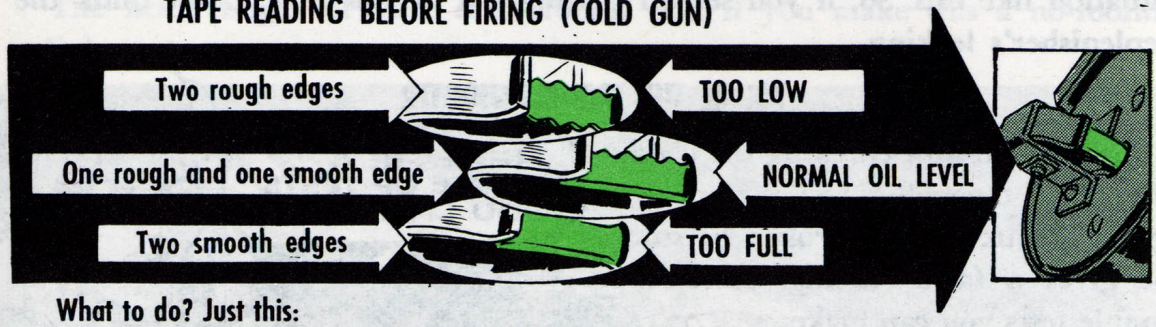
If the indicator shows two smooth edges, bleed it, man, like this: Hold a container under the petcock, open it and let the oil drain till one rough and one smooth edge (normal) shows. If there's no petcock, push in on the ball valve and drain just like before.

MORE

TALK

Here's what the tape talk means:

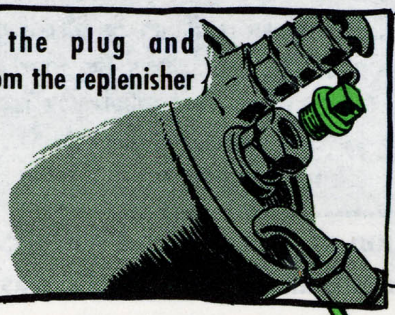
TAPE READING BEFORE FIRING (COLD GUN)



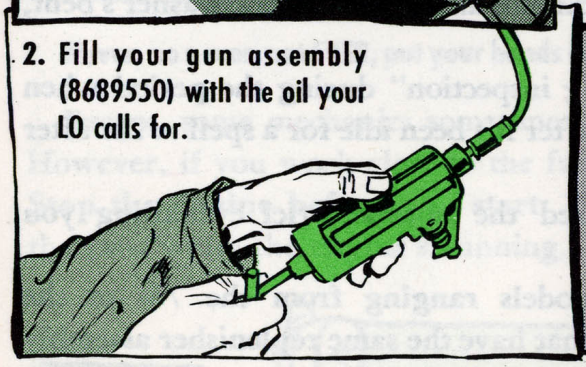
What to do? Just this:

If the tape indicates the oil's too low, add oil till the level's normal, like so:

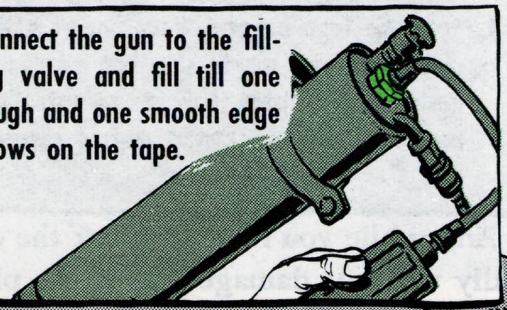
1. Remove the plug and washer from the replenisher assembly.



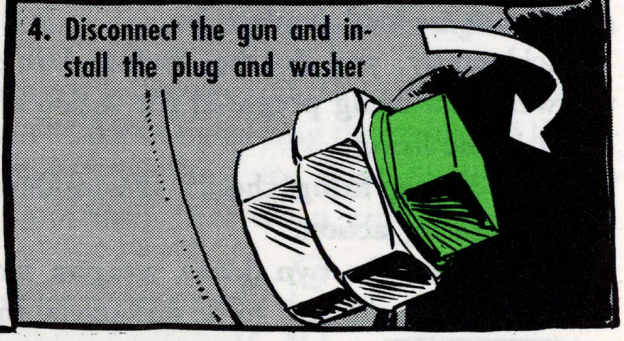
2. Fill your gun assembly (8689550) with the oil your LO calls for.



3. Connect the gun to the filling valve and fill till one rough and one smooth edge shows on the tape.



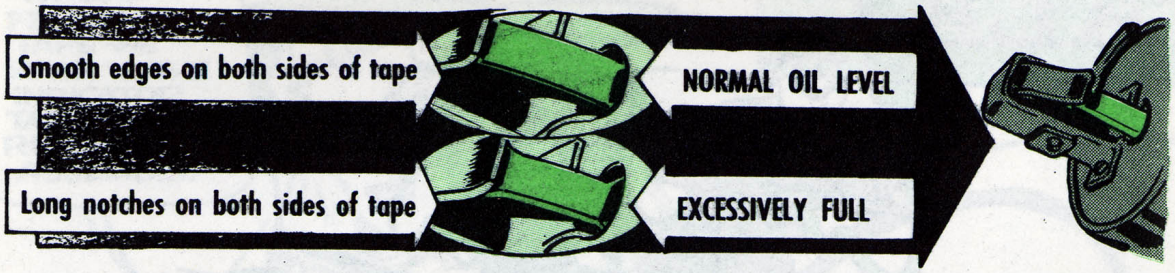
4. Disconnect the gun and install the plug and washer



If the indicator shows two smooth edges, bleed it, man, like this: Hold a container under the petcock, open it and let the oil drain till one rough and one smooth edge (normal) shows. If there's no petcock, push in on the ball valve and drain just like before.

PS MORE

TAPE READING DURING FIRING (HOT GUN)



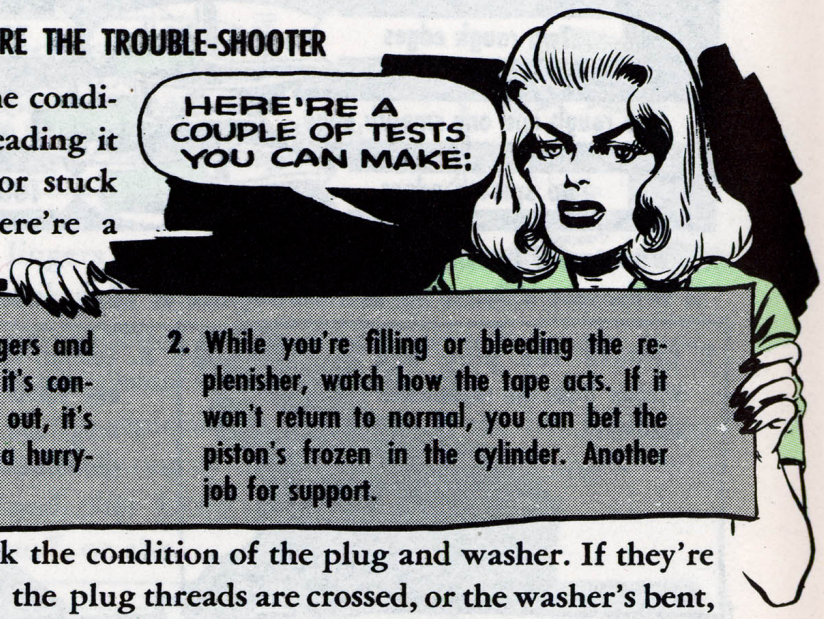
Huh, y'say? But, yup, that's right! If the tape's smooth on both sides while firing, it's OK. Y'see, oil in the recoil system'll expand slightly during firing. It'll return to normal after it cools down.

The replenisher, y'know, serves both as an oil reservoir to replace any oil that might get lost through leakage, and also to handle expansion during firing.

If the tape shows two long notches, bleed it, same as you do if it's too full. Incidentally, many replenishers also have an automatic bleed hole to handle a situation like this. So, if you see oil coming out of this hole, don't think the replenisher's leaking.

YOU'RE THE TROUBLE-SHOOTER

Get the habit of checking the condition of the tape while you're reading it to make sure it's not broken or stuck or gives a false reading. Here're a couple tests you can make:



1. Take the tape between your fingers and give it a slight tug to see that it's connected to the piston. If it moves out, it's broken. Give your support guys a hurry-up call.

2. While you're filling or bleeding the replenisher, watch how the tape acts. If it won't return to normal, you can bet the piston's frozen in the cylinder. Another job for support.

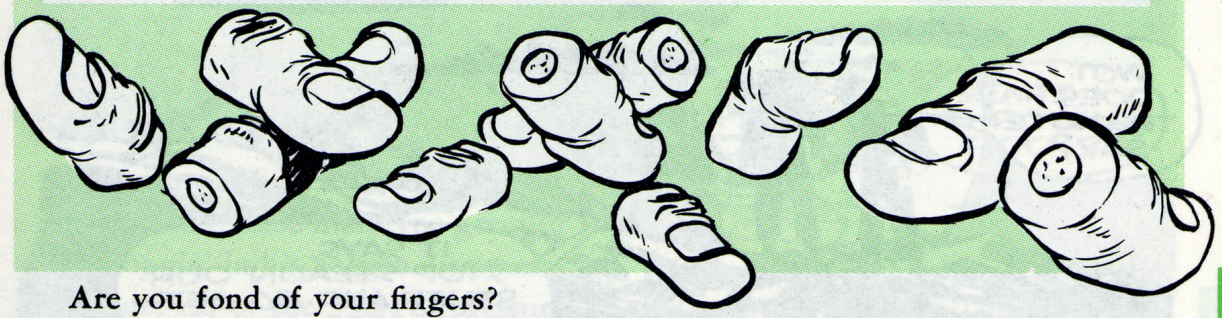
And while you're at it, check the condition of the plug and washer. If they're badly worn or damaged, or if the plug threads are crossed, or the washer's bent, cracked or twisted, replace 'em.

Incidentally, you do the "before-firing inspection" during the period when the weapon's being prepared for action after it's been idle for a spell . . . or after a lull in the firing.

The "during firing check" is considered the normal brief eyeballing you give it during action.

There're maybe two dozen weapon models ranging from the 76- to the 105-mm tank gun, and some howitzers, that have the same replenisher assembly (8689261 . . . FSN 1005-300-5395). But, whether yours is one of 'em or not, you and your piece can profit if you sing along on this "Rough, rough—not enough" ditty.

ATTENTION, FINGER LOVERS!

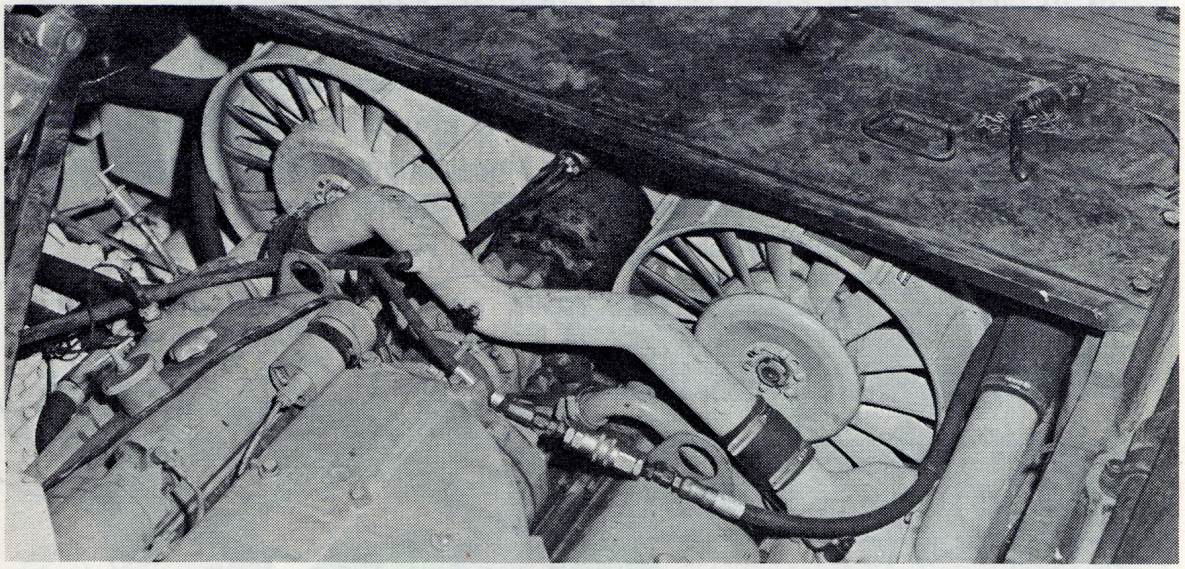


Are you fond of your fingers?

Then listen real sharp if you work with the M108 SP 105-mm howitzer (the former T195E1) or the M109 SP 155-mm howitzer (the former T196E1).

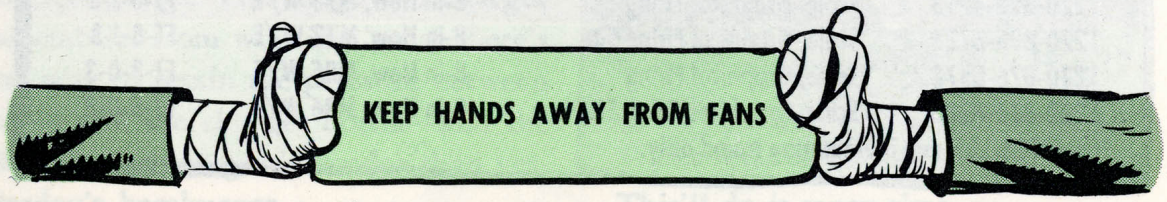
The cooling fans on these vehicles are like jet engines. They suck in and grind up anything that comes near them—including fingers. Several soldiers have already learned this the hospital way.

The fickle finger of Fate can't fondle you if you make this a no-foolin' rulin' . . .



Never, no never, not EVER, put your hands in the engine compartment with the engine running.

Except, some mechanics sometimes have to work with the engine running. However, if you work close to the fans—like in tightening the return oil line—**Stop the engine before you start.** There's nothing you have to do close to the fans while the engine's running. And steer clear when ground-hopping.



SLIP STICK SWITCH

Hey, Red Leg!

How are ya' fixed for sticks?

Like when the big word came that things artillery were moving from yards to meters—didja kinda get lost in the graphical firing scale shuffle?

And, you've been beggin', borrowin' and stealin' anything you can get your mitts onto, in order to catch up before the Old Man really blows his stack?

Hold it—don't send your best scrounger out again tonight on a moonlight requisitioning trip. He could become target bait . . . and besides he just might latch onto some of the old yard-type sticks in the dark.

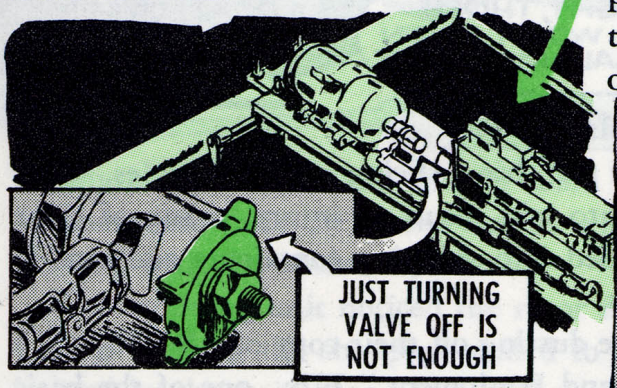
Here's a handy reference table that'll put you back in business in a hurry. It ties the graphical firing scales and sites to the firing tables they represent by gun and model number . . . and gives you the FSN to boot.

FSN	NOMENCLATURE	MODEL	FIRING TABLE
1220-815-6192	Scale, Graphical Firing	105-mm, M82 W/E	FT-105-H-6
1220-815-6190	Scale, Graphical Firing Site	105-mm, M83 W/E	FT-105-H-6
1220-789-2985	Scale, Graphical Firing	155-mm, M64 W/E	FT-155-Q-3
1220-789-2986	Scale, Graphical Firing Site	155-mm, M67 W/E	FT-155-Q-3
*1220-898-4212	Scale, Graphical Firing	155-mm, M70 W/E	FT-155-Q-3
1220-898-4213	Scale, Graphical Firing	8-in How, M71 W/E	FT-8-J-3
1220-898-6786	Scale, Graphical Firing Site	8-in How, M72 W/E	FT-8-J-3
1220-876-8572	Scale, Graphical Firing	8-in How, M85 W/E	FT-8-0-3
1220-876-8573	Scale, Graphical Firing Site	8-in How, M86 W/E	FT-8-0-3

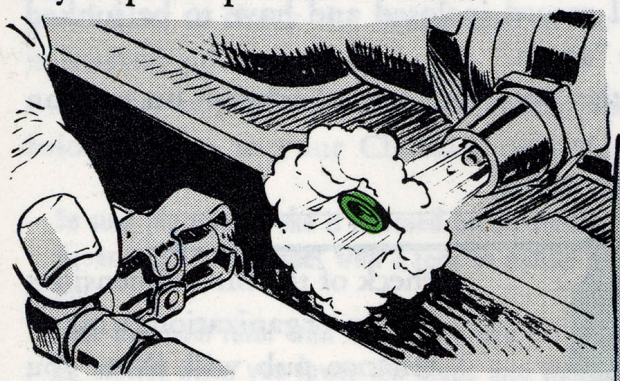
*For M118 155-mm illuminating round only.

BLOWING O-RINGS

Many a brave Sioux's yanked off the warpath 'cause some man-type gremlin with a foggin' in his noggin disremembers to get rid of the 350-PSI pressure in the pneumatic charger hoses of the XM1E1 armament subsystem before he disconnects 'em.



Forgetful Ferdie may think that if he turns off the charger bottle valve he's done all he has to. Not so. This only traps the pressure in there.

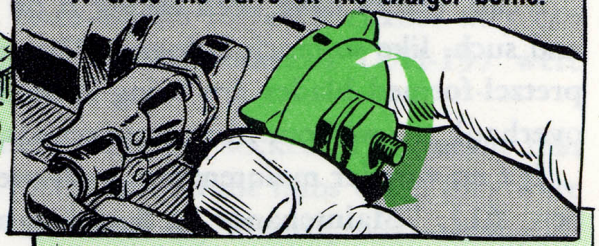


Result: As soon as he disconnects, the pressure blows the O-rings out of the couplings. This keeps the charger assemblies from working 'cause there's no way to retain the pressure between them and the charger bottle—and the M37C machine gun's deader than yesterday's hamburger.

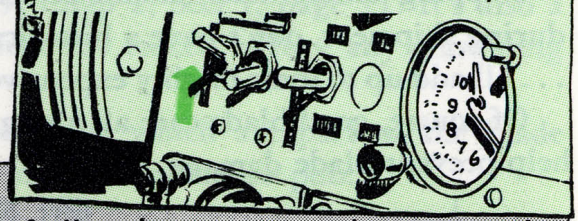
Of course, you've gotta replace the coupling (Coupling, Quick-Break . . . FSN 4933-886-8097) to bring the gun back to life, but less'n you take the right precautions next time you disconnect the hoses you'll be back of the same ol' 8-ball.

Here's the way to do it:

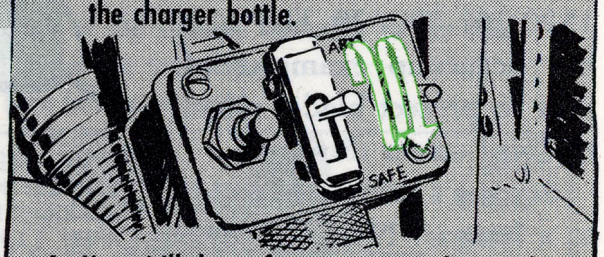
1. Close the valve on the charger bottle.



2. Put the master battery switch in the helicopter in the ON position. This'll supply electrical juice to the armament subsystem.

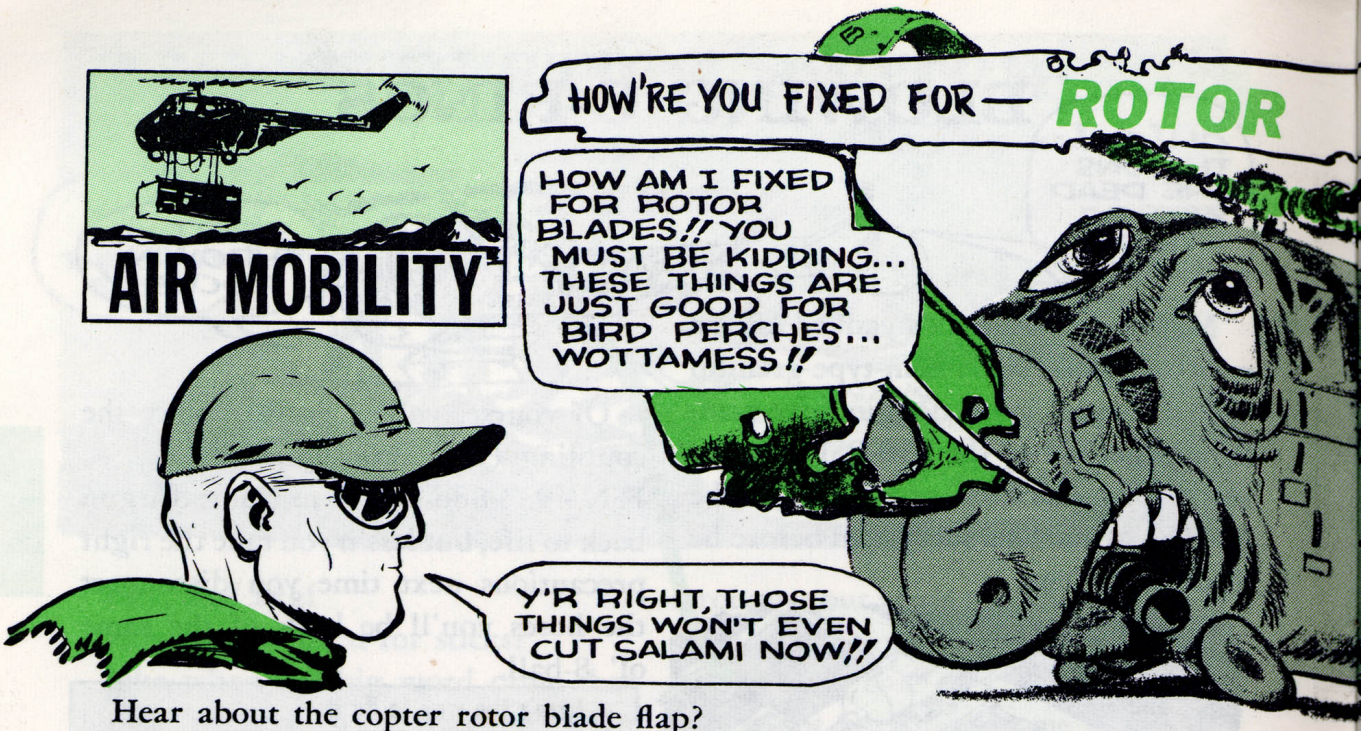


3. Move the armament switch to ARMED and then to SAFE position. Do this twice and you'll get rid of the line pressure that was trapped when you closed the valve on the charger bottle.



4. Now it'll be safe to remove the quick-disconnect from the charger bottle.

This'll do it every time.



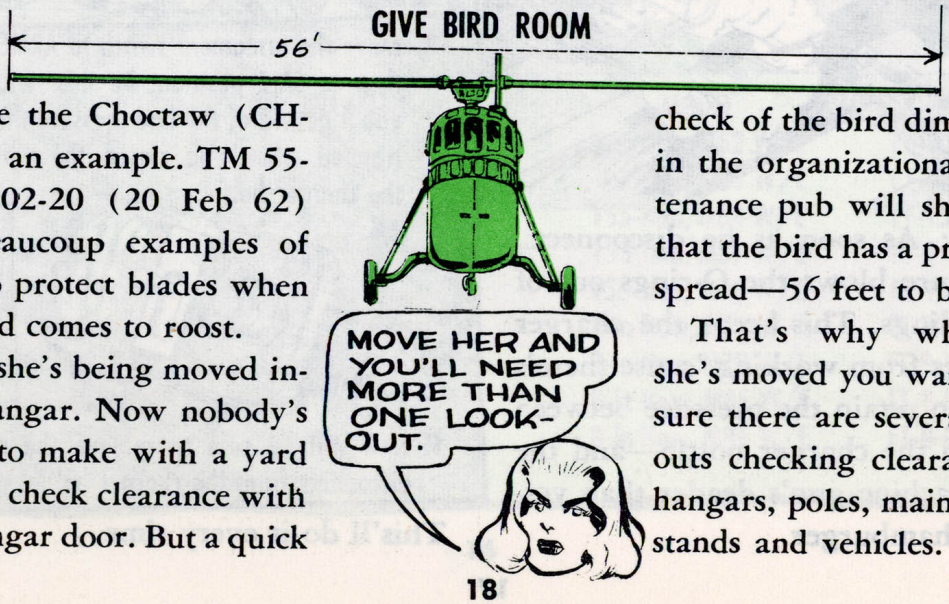
Hear about the copter rotor blade flap?

Yeah, blades have been taking it on the chin—slicing up trees, poles, wires and such, like so much bologna. Then, to add insult to injury, many of these pretzel-formed blades are being crammed into shipping containers and sent to overhaul . . . without historical records.

It's no wonder maintenance types are dusting off their copy of AR 750-5 (14 Sep 61), "Maintenance of Supplies and Equipment." Why, one of the basic principles of maintenance is to return repairable equipment to a serviceable condition with the least cost in manpower, money and material.

Shipping blades that: Should be scrapped, aren't packed right and get ruined during shipment, don't have a historical record inclosed and have to be junked . . . all add up to some mighty expensive "scrap."

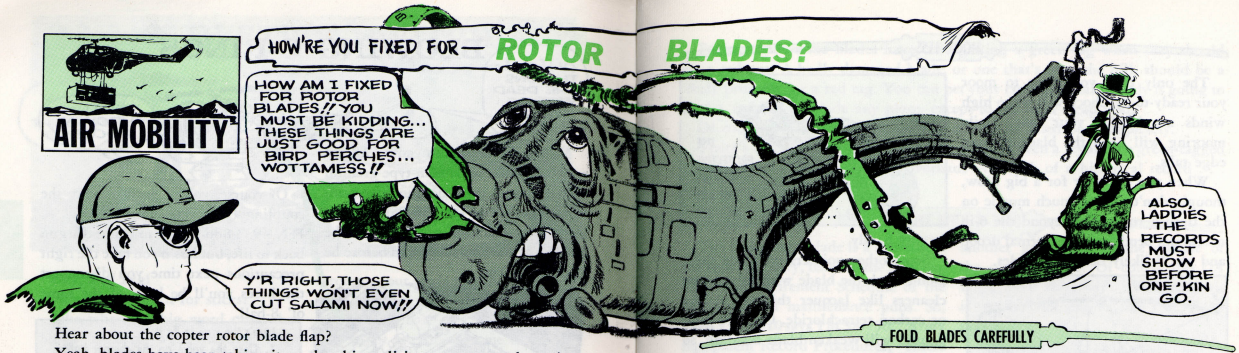
Of course, good blade care all along the line, from second echelon on up, can help prevent blade damage.



Take the Choctaw (CH-34) as an example. TM 55-1520-202-20 (20 Feb 62) has beaucoup examples of how to protect blades when the bird comes to roost.

Say she's being moved into a hangar. Now nobody's going to make with a yard stick to check clearance with the hangar door. But a quick check of the bird dimensions in the organizational maintenance pub will show you that the bird has a pretty big spread—56 feet to be exact.

That's why whenever she's moved you want to be sure there are several lookouts checking clearances of hangars, poles, maintenance stands and vehicles.



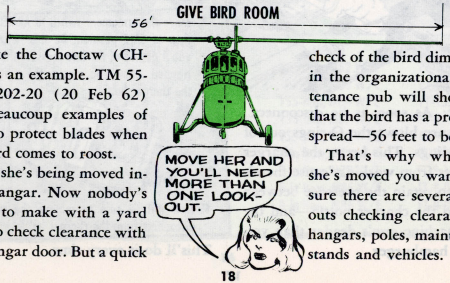
Hear about the copter rotor blade flap?

Yeah, blades have been taking it on the chin—slicing up trees, poles, wires and such, like so much bologna. Then, to add insult to injury, many of these pretzel-formed blades are being crammed into shipping containers and sent to overhaul . . . without historical records.

It's no wonder maintenance types are dusting off their copy of AR 750-5 (14 Sep 61), "Maintenance of Supplies and Equipment." Why, one of the basic principles of maintenance is to return repairable equipment to a serviceable condition with the least cost in manpower, money and material.

Shipping blades that: Should be scrapped, aren't packed right and get ruined during shipment, don't have a historical record inclosed and have to be junked . . . all add up to some mighty expensive "scrap."

Of course, good blade care all along the line, from second echelon on up, can help prevent blade damage.



Take the Choctaw (CH-34) as an example. TM 55-1520-202-20 (20 Feb 62) has beaucoup examples of how to protect blades when the bird comes to roost.

Say she's being moved into a hangar. Now nobody's going to make with a yard stick to check clearance with the hangar door. But a quick check of the bird dimensions in the organizational maintenance pub will show you that the bird has a pretty big spread—56 feet to be exact.

That's why whenever she's moved you want to be sure there are several lookouts checking clearances of hangars, poles, maintenance stands and vehicles.

FOLD BLADES CAREFULLY

Anytime you fold and unfold main rotor blades there's a chance they can be damaged. Take the recent case in which some Chickasaws (UH-19) were shipped with the blades folded.

The receiving unit noticed the rotor hubs were not locked. This meant that during loading, the choppers tended to rotate around the hubs when they were hoisted by the mast sling. And with the blades firmly folded, well—many of the blades took it on the chin.

So, the rotor brake **has** to be locked during the folding operation, just like it says in TM 55-1520-201-20 (30 Apr 62), Chap 2, Sect I, page 11. It's also a good idea to check the brake and make sure it's locked **before** any mast sling is hooked up.

Yessir, it pays to follow pointers like these, which are part of the blade folding poop in your Choctaw organizational maintenance pub.

Be sure the rotor brake is released before turning the main rotor blades.

Never handle the blades with a rope or deflect the blades more than five feet from their normal droop.

Lock the main rotor with the rotor brake.

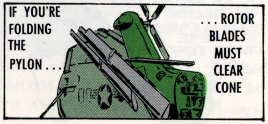
Be careful when you lower the blade into the pocket of the stowage assembly, so the blade doesn't get scratched by the hinge pin or any metal part of the assembly.

Never try to fold the main rotor blades with the horn lockpin engaged.

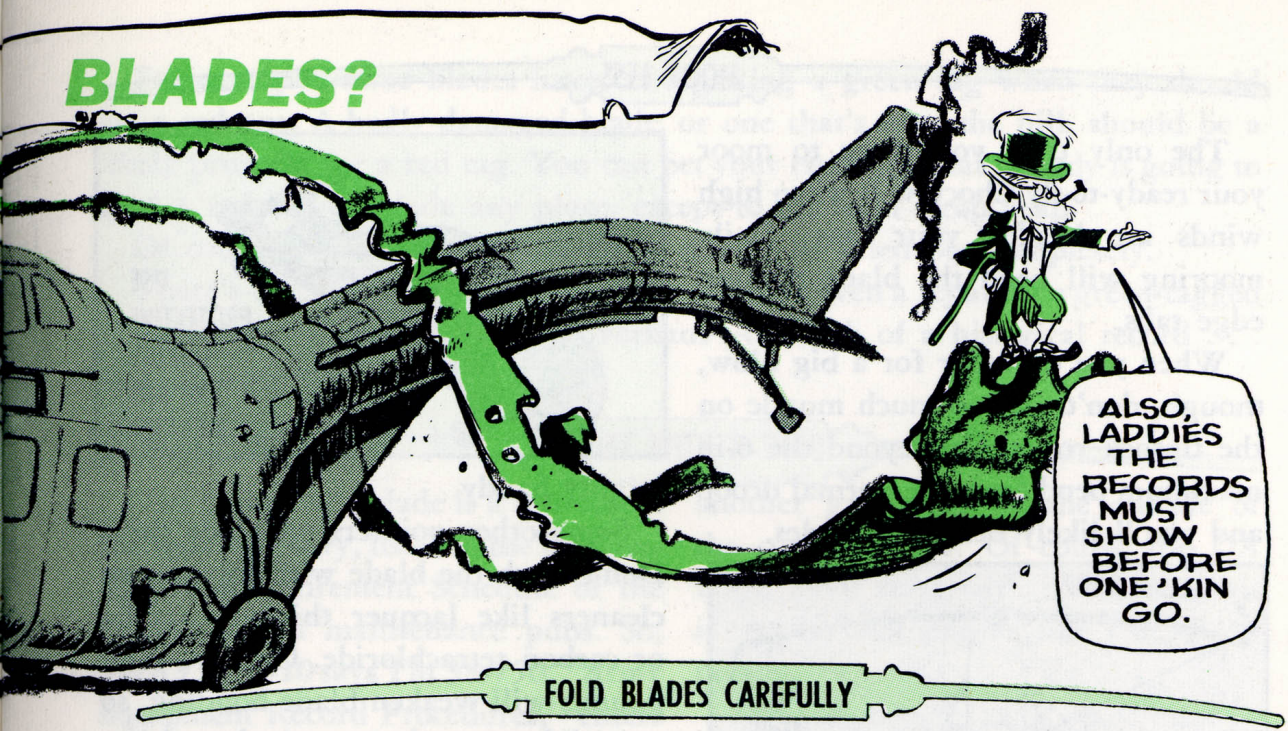
Never try to **rotate** a blade with the horn lockpin engaged.

Use the blade stowage assembly pockets for support of the blade only.

Of course, if you're folding the pylon the only protection needed on the tail rotor blades is to rotate them so that they'll clear the tail cone.



PS MORE



FOLD BLADES CAREFULLY

Anytime you fold and unfold main rotor blades there's a chance they can be damaged. Take the recent case in which some Chickasaws (UH-19) were shipped with the blades folded.

The receiving unit noticed the rotor hubs were not locked. This meant that during loading, the choppers tended to rotate around the hubs when they were hoisted by the mast sling. And with the blades firmly folded, well—many of the blades took it on the chin.

So, the rotor brake **has** to be locked during the folding operation, just like it says in TM 55-1520-201-20 (30 Apr 62), Chap 2, Sect I, page 11. It's also a good idea to check the brake and make sure it's locked **before** any mast sling is hooked up.

Yessir, it pays to follow pointers like these, which are part of the blade folding poop in your Choctaw organizational maintenance pub.

Be sure the rotor brake is released before turning the main rotor blades.

Never handle the blades with a rope or deflect the blades more than five feet from their normal droop.

Lock the main rotor with the rotor brake.

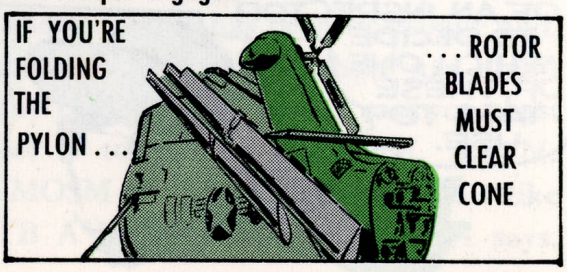
Be careful when you lower the blade into the pocket of the stowage assembly, so the blade doesn't get scratched by the hinge pin or any metal part of the assembly.

Never try to fold the main rotor blades with the horn lockpin engaged.

Never try to rotate a blade with the horn lockpin engaged.

Use the blade stowage assembly pockets for support of the blade only.

Of course, if you're folding the pylon the only protection needed on the tail rotor blades is to rotate them so that they'll clear the tail cone.

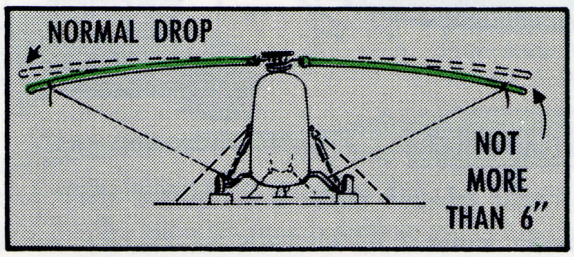


P.S MORE

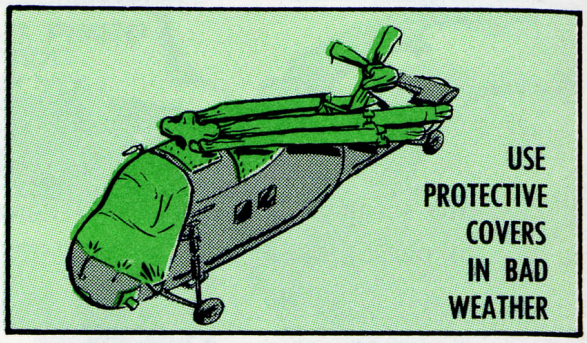
MOOR LESS

The only time you want to moor your ready-to-fly Choctaw is when high winds are headed your way. Daily mooring will bend the blade trailing edge tabs.

When you do moor for a big blow, though, don't use too much muscle on the tipsock ropes. Go beyond the 6-in maximum bend from the normal droop and you'll likely bend the blades.



To protect the blades during bad weather, the bird covers also come in mighty handy.



Some other pointers on blade care: Don't wash the blade with solvents or cleaners like lacquer thinner, naptha or carbon tetrachloride. Organic compounds will weaken blade bonding, so use mild soap and water. And no painting of the blades either . . . throws them out of balance for real.

EXTRA CARE PAYS

When the time comes to change a blade, for one reason or another, extra handling care is needed all along the line. But the big dollar saving decisions are made in the field, just after the blade is taken off the bird and put in its padded storage rack.

The first step, which separates the men from the boys, is to check TB AVN 23-10 (18 Sep 62), "Aircraft Accessory Replacement and Reuse Procedures."

Right off the bat the TB says that all repairable accessories should be tagged. 'Course, even without checking the DA Pam 310-4 index, almost everybody knows that the poop on marking and tagging air items is in SB 1-15-11 (17 Aug 62).

The SB opens up with poop about the CO picking an inspector who knows his onions about blades.

TAG	USE FOR
Yellow, DA Form 10-196	Accepted or serviceable blade
Green, DA Form 10-197	Repairable or rework blade
Red, DA Form 10-198	Rejected or condemned blade
Blue, DA Form 10-199	MWO compliance blade
Buff, DA Form 2402	Exchange blade

For example, some blades have been getting a green tag when they should get a red one. A badly damaged blade, or one that's over the hill, should be a likely prospect for a red tag. You can bet your last buck that nobody is going to send a red-tagged blade any place, except to the local scrap heap.

Of course, whichever tag is used, it should be filled out completely.

There's a couple of other angles that can turn even a repairable green-tagged blade into scrap once it gets to overhaul—the lack of a historical record . . . and bum packing.

MAKE WITH A 2410

The main rotor blade is a retirement life type accessory, listed in the Replacement and Retirement Schedule of the organizational maintenance pubs. So, TB AVN 23-10 says TM 38-750, "Army Equipment Record Procedures," enters the picture.

When a blade is shipped from a depot to you it has to have a filled out DA Form 2410, "Component Removal and Repair Overhaul Record," with it.

So when you use the new blade all of the DA Form 2410 poop is transferred onto a DA Form 2408-16, "Component Installation and Removal Record," for your bird.

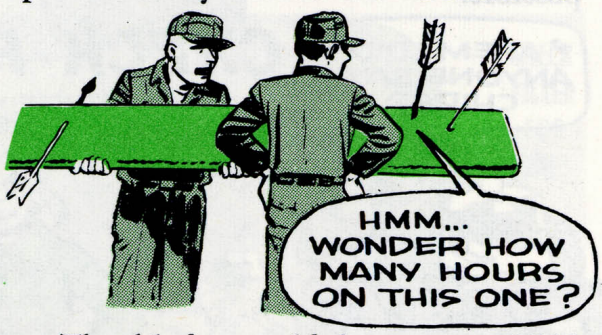
But remember that this is a two-way street.

So when a blade is damaged beyond field repair, or it's to be taken off your chopper for use on another one, you make out a new DA Form 2410, transferring all the info from the DA Form 2408-16 onto it.

The DA Form 2410 is then put into the blade container, along with a green tag, for shipment. Don't forget to put another green tag on the outside of the container too! Of course the DA Form 2410 stays with the blade until it's put on another bird, like TM 38-750 says.

How important is this blade info?

Well, take the case of some 20-odd Sioux (OH-13) blades, FSN 1560-593-3310, that showed up at a contractor's plant recently without a DA Form 2410.



The blades could have gone 2500 hours, but nobody knew the total time on them. And with an unknown on such an important item, the whole bunch had to be sent to the scrap pile . . . all that material and shipping costs down the drain.

Of course, there may be rare cases where a blade has been in storage and, search as you might, there just aren't any records on it. In this case your best bet is to contact AVSCOM, ATTN: SMOSM-NU, for disposition . . . like TB AVN 23-10 with Change 1 says.

PS MORE

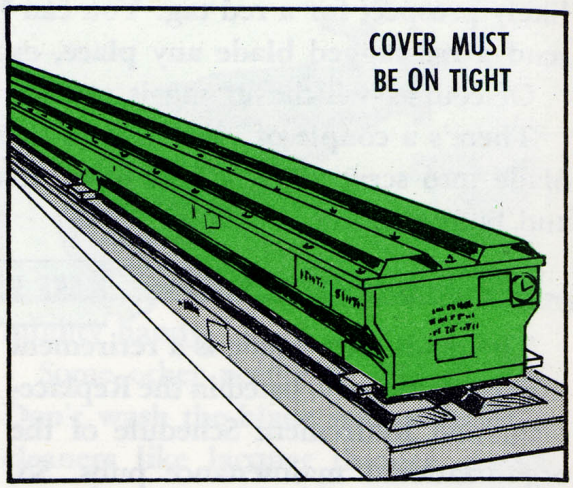
PACK BLADE RIGHT

Once a reparable blade has been tagged, and the DA Form 2410 made out, the last step is packing.

To make sure the blade doesn't become "scrap" en route, the blade wants to get the same protection as a new blade. It should be strapped down so it can't bang around inside the container.

When you put the lid on the container, remember to tighten all of the fasteners, for a real good reason. Due to the length of the container, its full strength can only be realized when the cover is on tight. It's a real weakling with a loose cover.

So a bent or twisted container could affect the condition of the blade inside, and make reuse of the container impossible.



There's no doubt about it. From the time a new rotor blade is uncrated, until it's shipped back to overhaul, it needs a lot of extra care . . . the kind only **you** can supply.

How important is the info in the special inspection and part retirement sections of your organizational maintenance pub? Mighty.

The same principle goes for a TWX that changes the poop from time to time. Follow it to the letter and you can let the chips fall where they may.

Take TWX SMOSM-ELUH-1-08-1501 (23 Aug 63) on the Huey UH-1A and B models.

Seems like the replacement and retirement schedule in the organizational maintenance pub has a replacement time of 1000 hours on some of the transmission mast assemblies. But that was before the mast bearing in there started to act up.

Bearing, P/N 204-040-136-5, just doesn't have the stuff that good bearings are made of. So the TWX says the mast assembly on your bird now gets

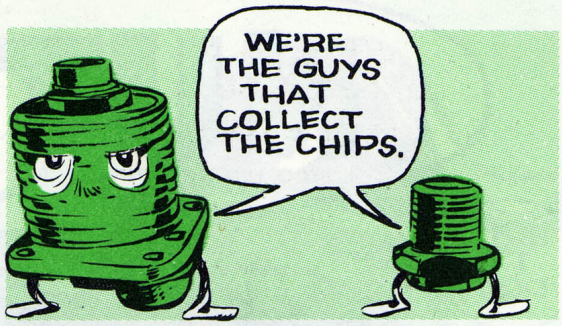
replaced at 400 hours, and the bearing is retired for keeps at the same time.

Para 4e(1) of TB AVN 23-10 (18 Sep 62), on accessory changes, doesn't let you go past the 400 hours, either.

The mast (and bearing) TBO is even less—200 hours—if you're in the area covered by TWX SMOSM-ELUH-1-08-1500 (23 Aug 63).

But no matter where you hang your cap, be sure to make a special check of the transmission primary oil filter and the magnetic drain plug every 10 hours, for metal chips.

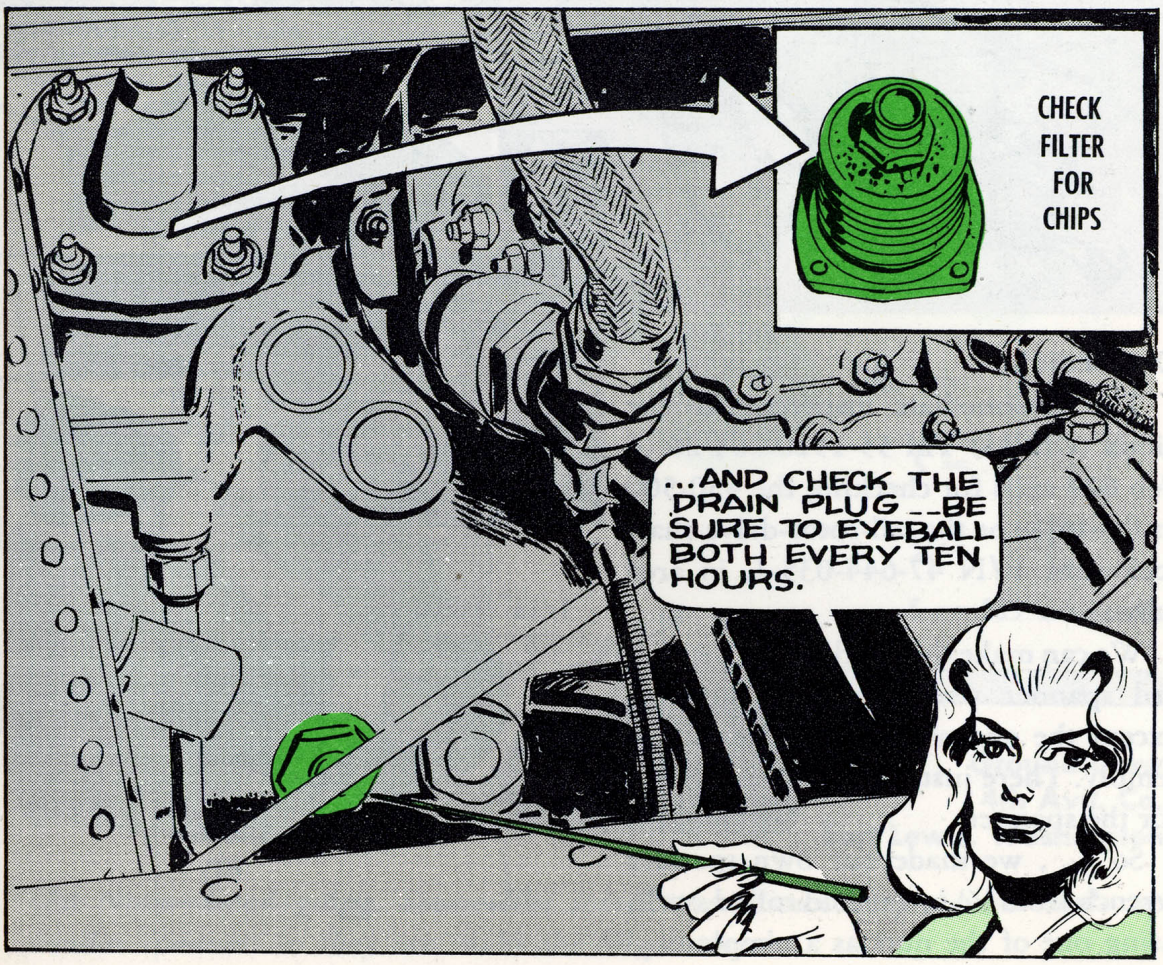
Naturally any metal chips mean that the bird's probably going to wind up at support for a disassembly check. And if those chips in the filter are bronze—



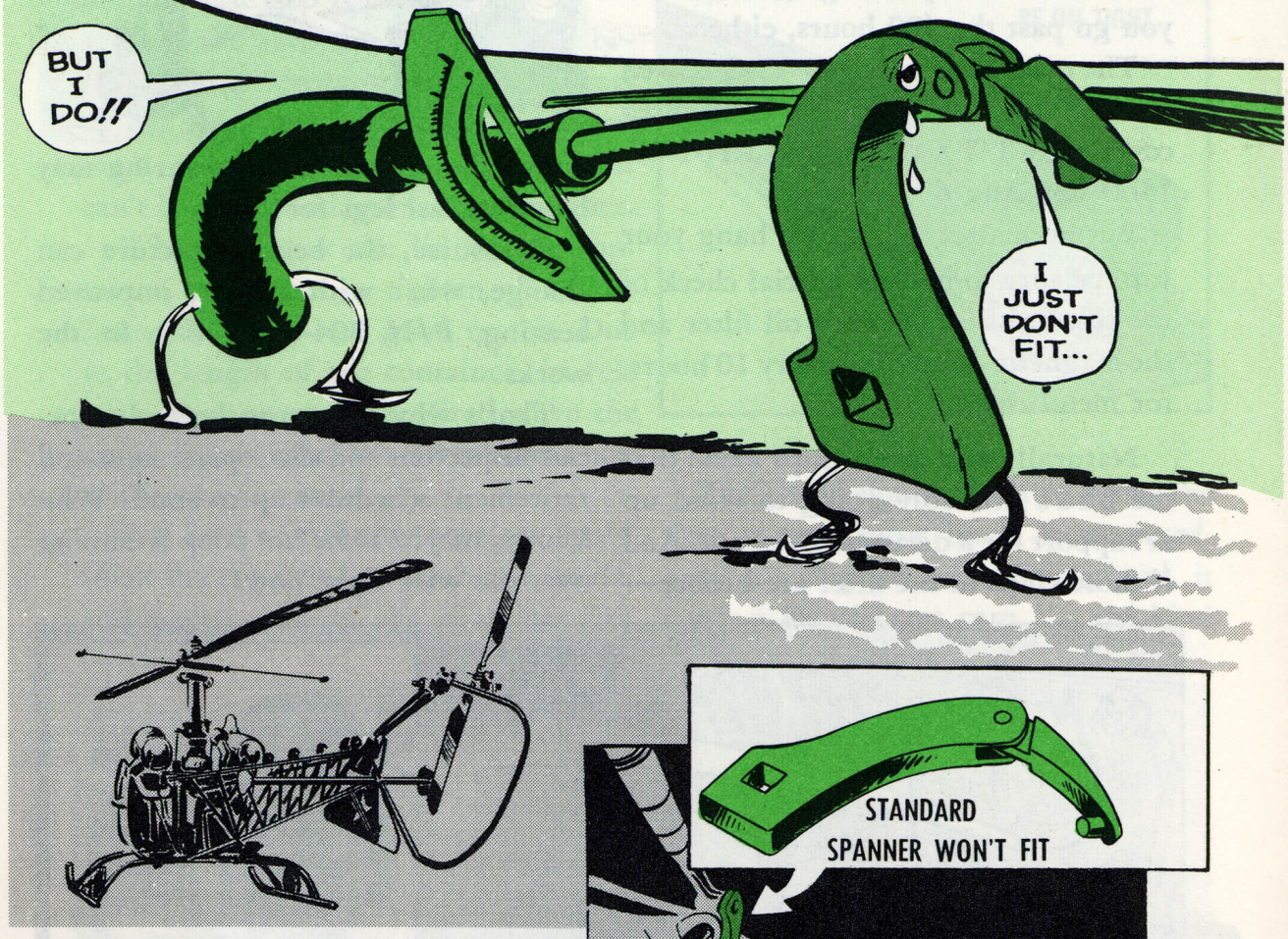
well—the mast assembly bearing may be on its last legs for real.

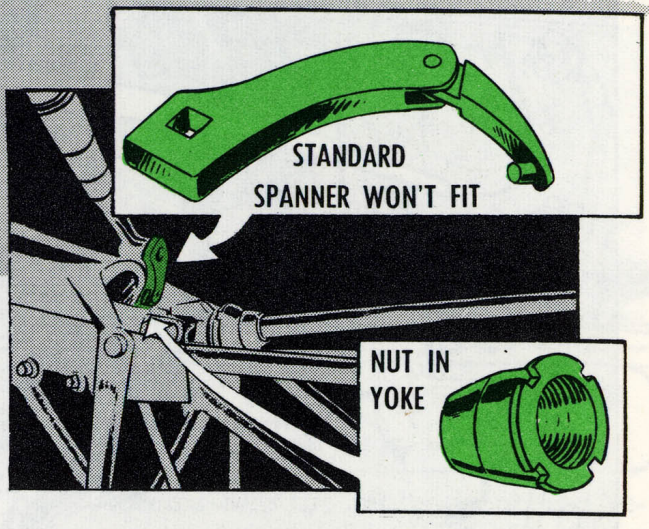
Of course, the bearing picture can change, what with a new, improved bearing, P/N 204-040-136-7, in the works.

That's why it pays to keep the special inspection and the replacement and retirement schedules up to snuff. Who knows, maybe some hot poop is coming over the wire right now!



NUT A PRO



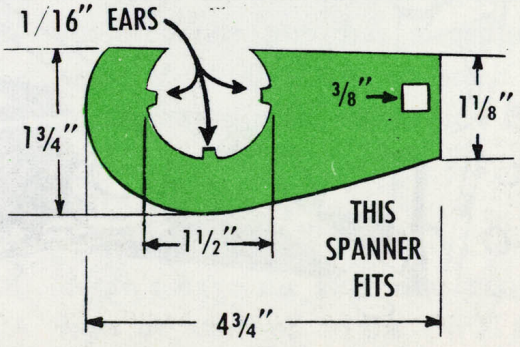


Dear Editor,

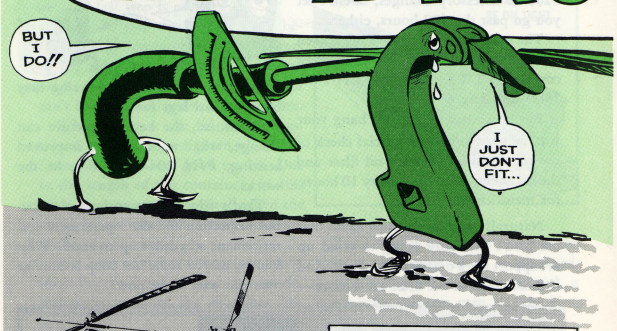
The intermediate inspection in the Sioux (OH-13) TM 55-1520-204-20 (6 Feb 62) calls for checking the 450-500 in-lb torque on the tail-rotor-drive-shaft lock-nuts, P/N 47-644-035-1, in area 3.9.

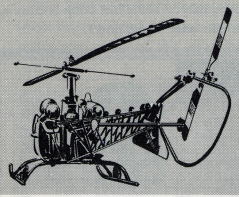
We can make the check using a standard spanner wrench on all the nuts except the one nestled in the yoke assembly. There just wasn't enough room for the spanner.

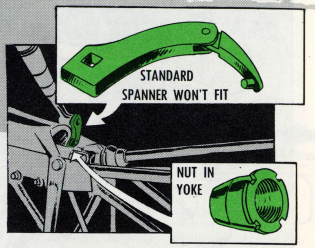
So . . . we made our own spanner wrench from ¼-in flat cold rolled stock, using one of the nuts as a template.

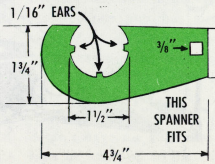


NUT A PRO BLEM?







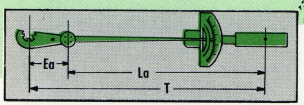


Dear Editor,

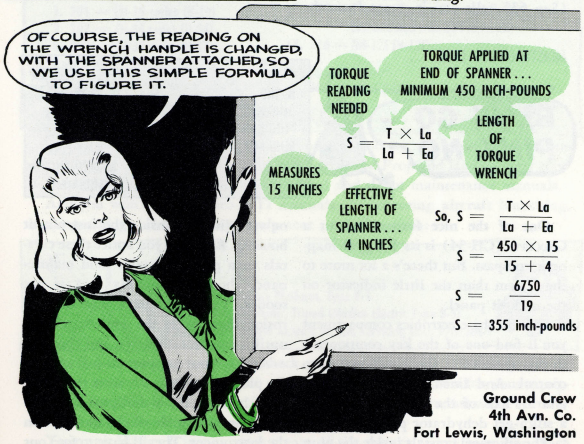
The intermediate inspection in the Sioux (OH-13) TM 55-1520-204-20 (6 Feb 62) calls for checking the 450-500 in-lb torque on the tail-rotor-drive-shaft lock-nuts, P/N 47-644-035-1, in area 3.9.

We can make the check using a standard spanner wrench on all the nuts except the one nestled in the yoke assembly. There just wasn't enough room for the spanner.

So . . . we made our own spanner wrench from ¼-in flat cold rolled stock, using one of the nuts as a template.

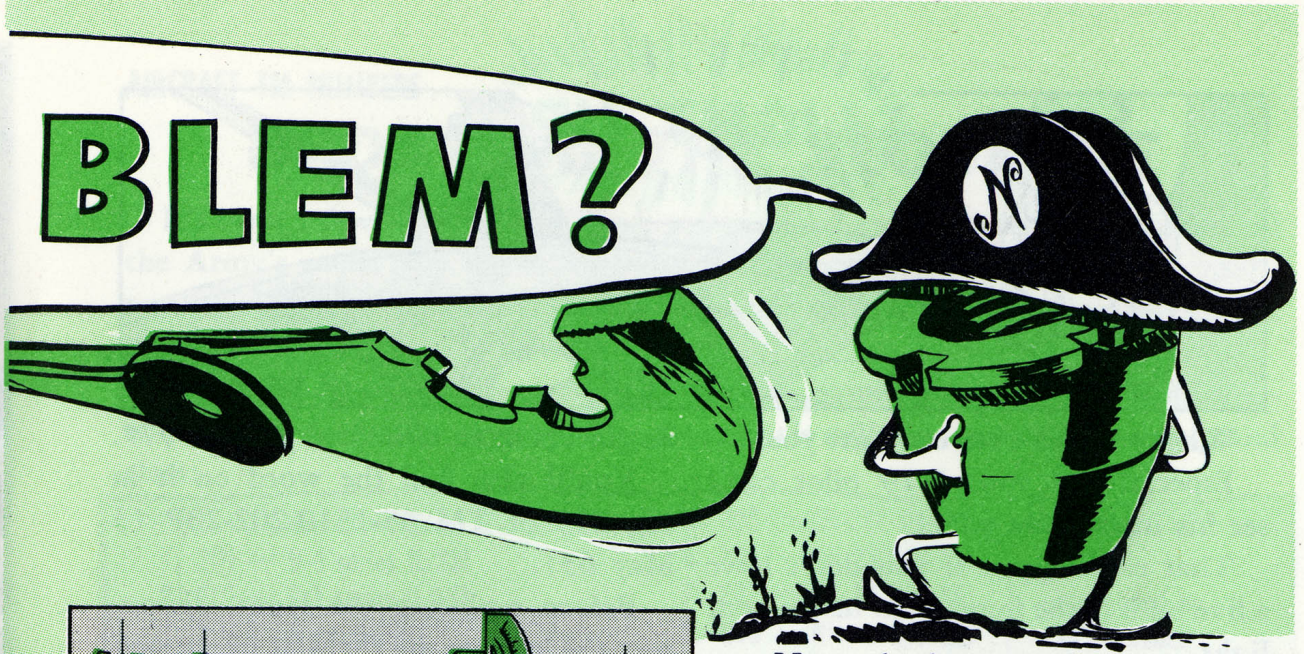


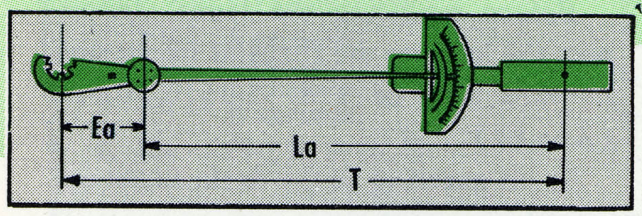
Now, checking the recessed nut is a breeze. All we do is slip the spanner on the torque wrench, engage the nut, and take the reading.



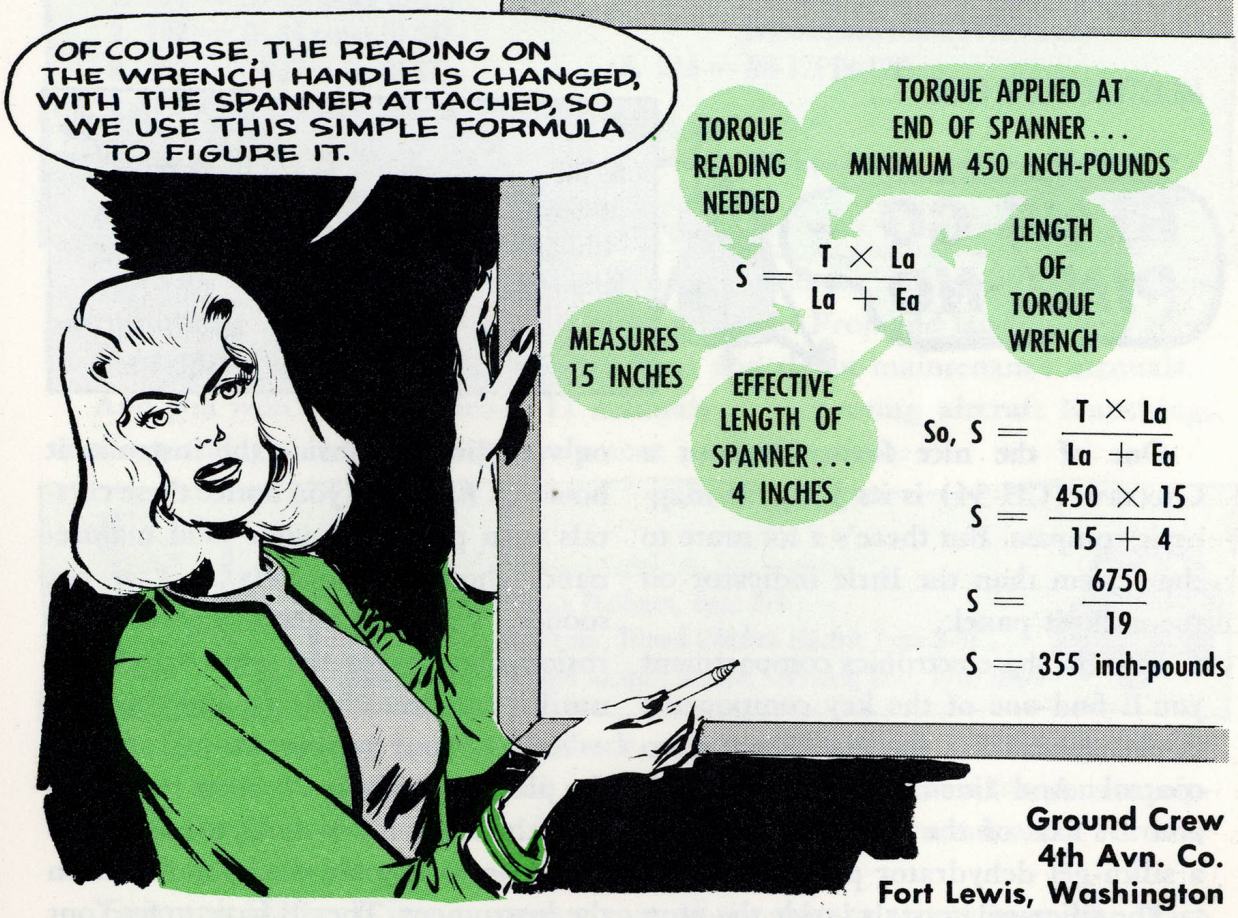
Ground Crew
4th Avn. Co.
Fort Lewis, Washington

(Ed Note—Good going. Seems like some other Sioux outfits have made up similar spanners so they can make the torque check.)



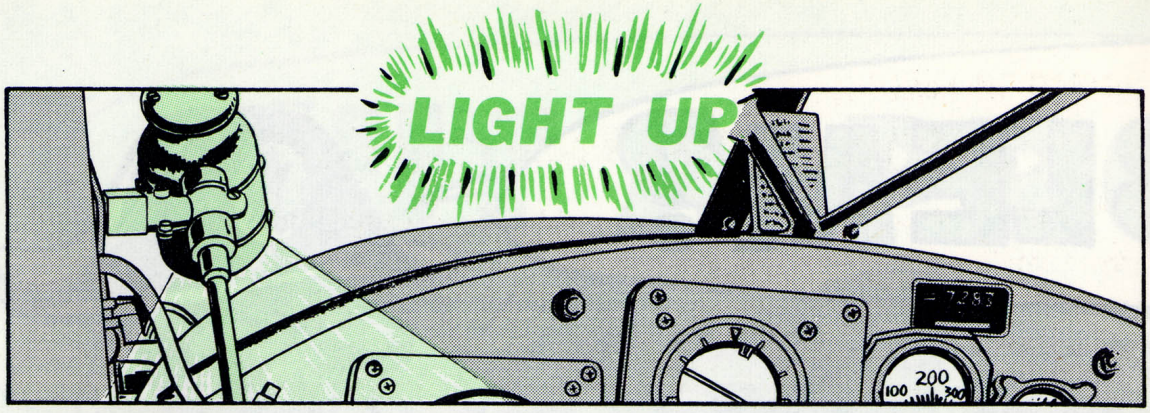


Now, checking the recessed nut is a breeze. All we do is slip the spanner on the torque wrench, engage the nut, and take the reading.



Ground Crew
4th Avn. Co.
Fort Lewis, Washington

(Ed Note—Good going. Seems like some other Sioux outfits have made up similar spanners so they can make the torque check.)



What you can't see can hurt you.

Especially if your L-19 pilot can't see his instrument panel.

That can happen if you don't have a live bulb in the fluorescent instrument light.

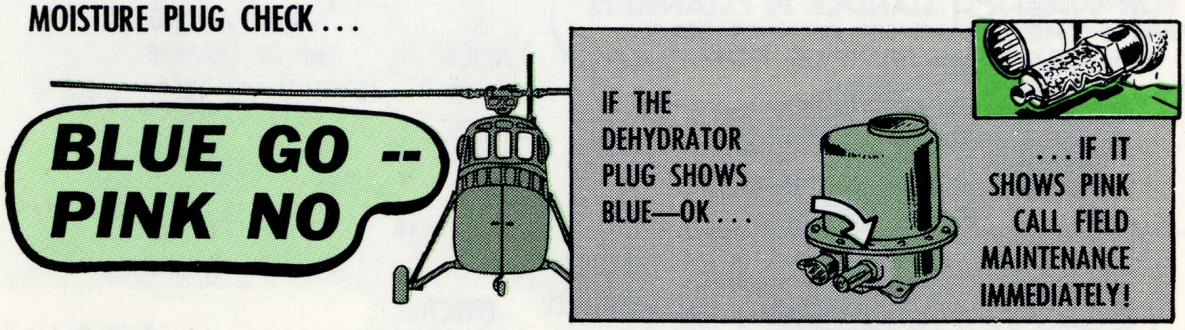
When you need a replacement, you ask for Lamp, Fluorescent (P/N F5000), FSN 6240-178-9935. SM 5-2-2 (Sep 63) tells you it comes from the Engineers at an estimated price of 77¢.

You'll also find the word on it in Fig 233 of TM 55-1510-202-20P (3 May 63).

Before replacing the lamp, disconnect the leads at the rheostat like it says in para 9-81 of TM 55-1510-202-20 (Apr 61).

So no guessing in the dark. Light up.

MOISTURE PLUG CHECK . . .



One of the nice features about a Choctaw (CH-34) is its J-2 gyro magnetic compass. But there's a lot more to the system than the little indicator on the cockpit panel.

Back in the electronics compartment you'll find one of the key components in this system . . . the directional gyro control. And lined up with the fore and aft axis of the control housing is a silica-gel dehydrator plug.

The silica-gel crystals inside the plug must always be some shade of blue as an indication that either no moisture, or very little, is inside the instrument housing. Any time you notice these crystals turn pink, call your field maintenance shop **immediately** . . . if not sooner. You could have internal corrosion that makes the gyro unreliable until it can be torn down and checked.

Asking your support to just change the plugs won't help . . . since the silica-gel, although it's a dessicant, can't be relied on to absorb **all** the moisture in the instrument. They'll have to find out where the moisture's coming from and get it stopped.

AIRCRAFT TM NUMBERS . . .

UPDATING THE SEQUENCE

It's been a few years since aircraft publications came under the influence of the Army's multi-part manual system. So what with new aircraft being added to the inventory—and redesignations for all our birds—it's time to update things here.

Besides, a quick reference list that you can paste up in your unit library always comes in handy anyway. The sequence is still the same in each group and class:

FSC 1510 (Aircraft—Fixed Wing)

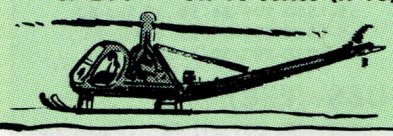
1. 201 = U-8 series (L-23)
2. 202 = O-1 series (L-19)
3. 203 = U-6A (L-20)
4. 204 = OV-1 series (AO-1)
5. 205 = U-1A (same)
6. 206 = CV-2 series (AC-1)

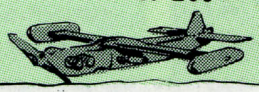
FSC 1520 (Aircraft—Rotary Wing)

1. 201 = UH-19 series (H-19)
2. 202 = CH-34 series (H-34)
3. 203 = CH-37 series (H-37)
4. 204 = OH-13 series (H-13)
5. 205 = CH-21C (H-21)
6. 206 = OH-23D (H-23)
7. 207 = UH-1A (HU-1A) } superseded by
8. 208 = UH-1B (HU-1B) } 211 manuals
9. 209 = CH-47A (HC-1B)
10. 210 = UH-1D (HU-1D)
11. 211 = UH-1A & -1B (Consolidation of 207 & 208 manuals)
12. 215 = OH-13S (These will eventually be consolidated with 204 manuals)
13. 216 = UH-12E (H-12E)

FSC 1550 (Drones)

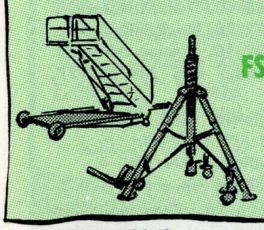
1. 200 = MQM-57A (USD-1)





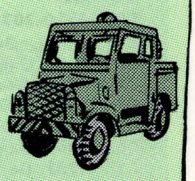
Group 16 covers aircraft components and accessories, for which there are no operators' or organizational maintenance manuals. Prop and landing gear components, for example, require only overhaul and depot maintenance manuals.

And you won't see any Group 17 manuals . . . covering aircraft launching, landing and ground handling equipment . . . other than:



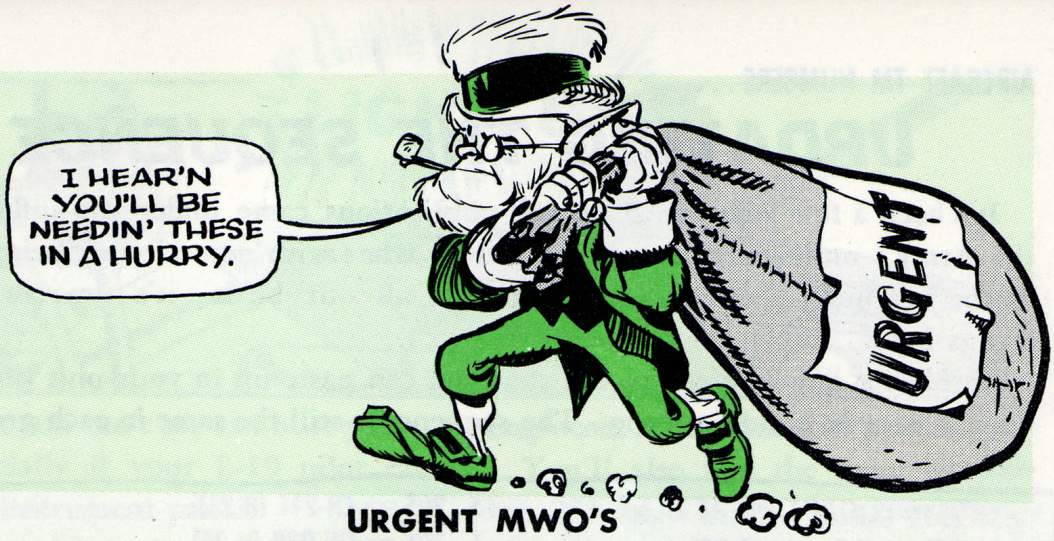
FSC 1730 (Aircraft Ground Servicing Equipment)

1. 201 = Maintenance Platform, Type B-1
2. 202 = Jack, Hydraulic, Tripod (Medico Electric Type B-5)
3. 204 = Multipurpose Aircraft Ground Servicing Unit, Type MA-1



You'll have to keep a constant check on your DA Pam 310-4 index to be sure you have all authorized and available pubs in each series for your equipment. If the pinpoint initial distribution system lets you down, use a DA Form 17 to order what missed you.

Your unit library is just as much a part of the system as anything else. Each **–10 = operation . . . –20 = maintenance . . . –20P = supply.** You need 'em all to get with the program—and stay with the program.



URGENT MWO'S

*Here is a list of the **only** Urgent MWO's now out. Forget the lists you saw in PS 131 and 133. This new list went out Army-wide via DA Message 952611 on 22 Jan 64.*

TCTM NUMBER

TM 1-1H-37-1007, 5 May 61, C1 14 Aug 61, C2 29 May 62.
TM 1-1H-37A-1031, 22 Jan 59, C2 13 Jul 59.
TM 1-1H-37A-1034, 15 Dec 59, C1 28 Apr 60.
TM 1-1L-19-1005, 16 Jul 58, C1 Jun 59.
TM 1-1L-19(T)D-1002, 12 Jun 59, C1 23 Dec 59.

MWO NUMBER

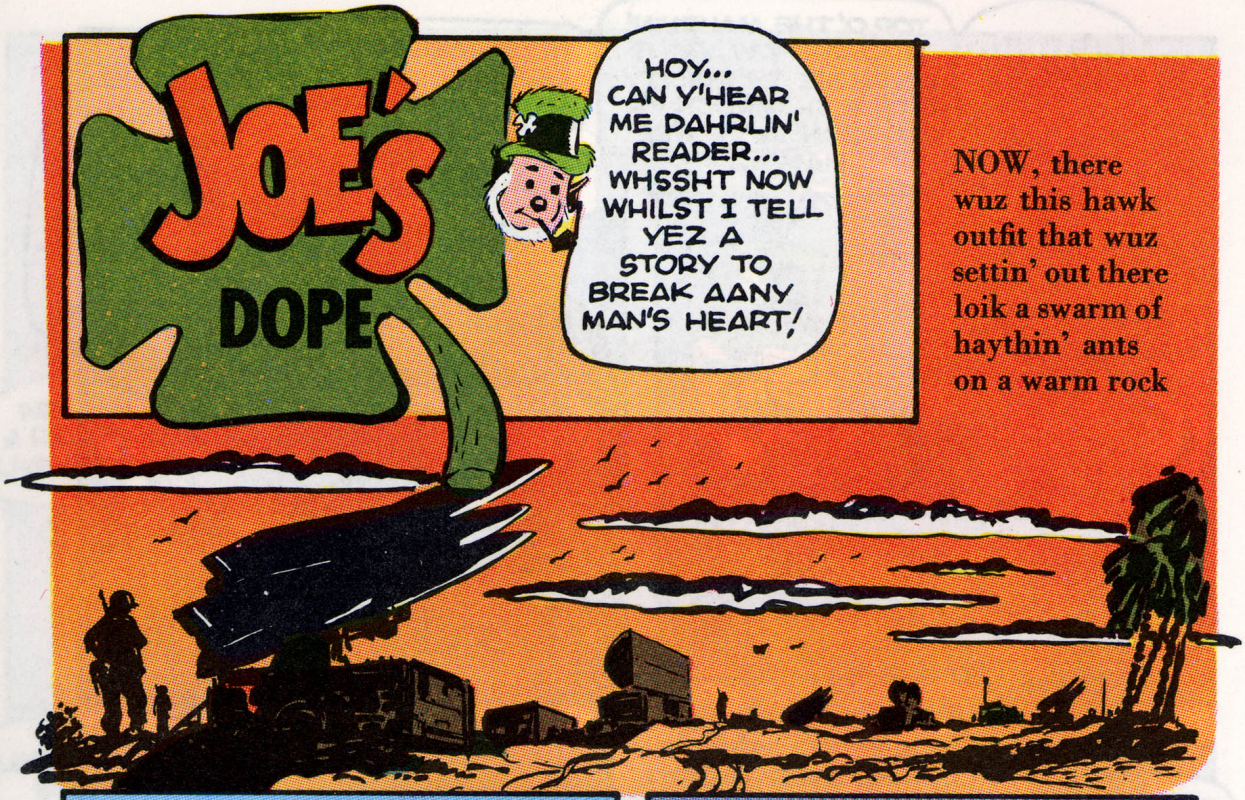
3-1040-206-45/3, 18 Sep 62.
5-4610-202-35/1, 8 Sep 61.
8-6525-200-20/1, 10 Jun 59.
8-6525-201-20/1, 1 Oct 59.
MED 16, 25 Sep 58, C1 16 Feb 59.
9-1005-224-30/1, 26 Aug 63.
9-1100-250-30/1, 18 Sep 63.
9-1410-400-34/2/1, 6 Mar 62.
9-1430-254-30/2/4, 20 Jul 62.
9-1430-267-30/1/6, 25 Jul 63.
9-2300-217-30, 14 Nov 61.
9-2350-215-30/7, 1 Oct 62.
9-4910-418-30/1, 28 Jan 63, C1 12 Jun 63.
9-4935-251-30/2, 25 Oct 61.
ORD J753-1-W15, 11 Sep 61.
10-1670-213-30/1, 9 Sep 63.
10-1670-215-20/2, 11 Dec 63.
11-5826-215-35/1, 3 Jul 62.
11-6720-219-45/1, 20 Jul 62.
11-6720-220-13/1, 24 Jul 62.
55-1510-204-20/2, 1 Jun 61, C1 27 Jun 61.
55-1510-204-20/5, 19 Jul 61.
55-1510-204-34/9, 12 May 61.
55-1510-204-34/31, 21 Nov 61.
55-1510-204-34/41, 27 Apr 62.
55-1510-204-34/43, 27 Apr 62.
55-1510-204-34/44, 4 May 62, C1 12 Apr 63.
55-1510-206-34/2, 27 Sep 61.
55-1510-206-34/3, 8 May 62.
55-1520-207-20/33, 20 Jul 61. C1 22 Sep 61.
55-1520-207-34/34, 5 Aug 61.
55-1520-207-34/35, 27 Oct 61, C1 23 Apr 62.
55-1520-207-34/52, 29 May 62.
55-1520-208-34/19, 29 May 62.
55-1520-208-34/21, 5 Sep 62.
55-1520-209-34/21, 26 Jun 63.
55-1520-209-34/38, 23 Sep 63.
55-1520-211-34/22, 6 Aug 63.
55-2220-203-30/1, 30 Aug 63.

AND MORE "TRAFFIC LIGHT" PUBS (ESC)

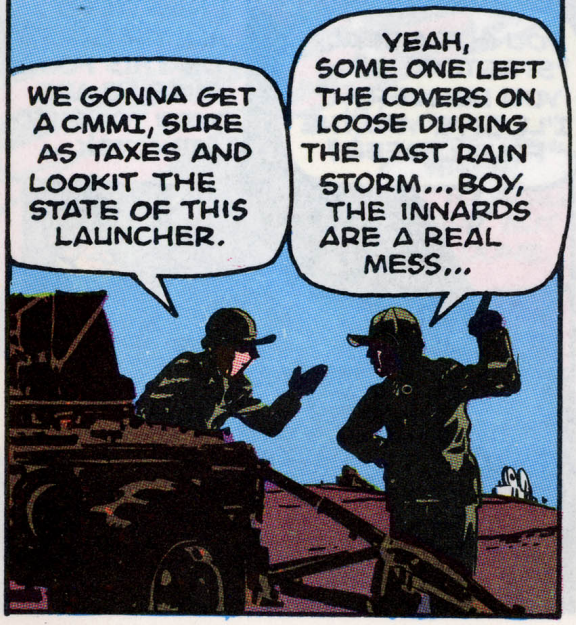
Here's the latest addition to the growing Equipment Serviceability Criteria TM changes. For the previous listings see PS 131, pages 10 and 11 and PS 133, page 28.

TECHNICAL MANUALS

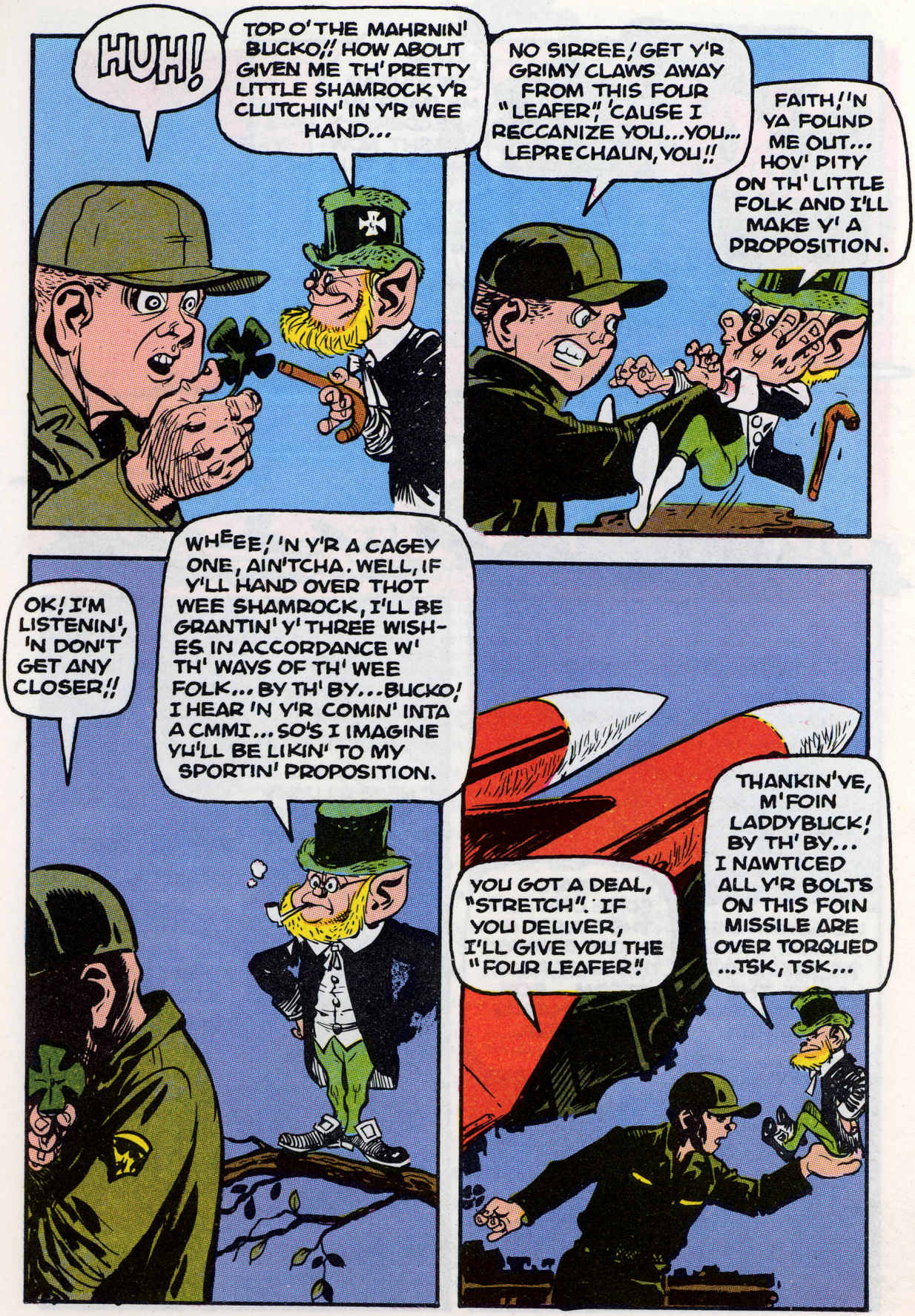
C1 5-2097, Pump, centrifugal.
C1 5-2114, Pump, centrifugal.
C4 5-3810-202-10, Carrier, crane-shovel.
C2 5-3810-203-10, Crane-shovel, truck mounted.
C3 5-4310-203-10, Compressor, air.
C1 5-5002, Generator set, portable.
C1 5-5013, Generator set, electric.
C1 5-5081, Gen Set, Ptble.
C3 5-5321-1, Gen Set, electric.
C1 5-5355, Gen Set, ptble diesel.
C1 5-5356, Gen Set, ptble, diesel.
C2 5-5381, Gen Set, ptble.
C3 5-5403, Compressor, air.
C2 5-5420-200-12, Launcher, bridge, M48A2.
C2 5-6115-202-10, Gen set, diesel engine.
C3 5-6115-208-10, Gen set, diesel engine.
C2 5-6115-210-10, Gen set, gasoline engine.
C3 5-6115-213-10, Gen set, diesel engine.
C2 5-6115-220-10, Gen set, diesel engine.
C3 5-6115-221-10, Gen set, diesel engine.
C3 5-6115-222-10, Gen set, gasoline engine.
C2 5-6115-236-15, Gen set, gasoline engine.
C3 5-6115-239-10, Gen set, diesel engine.
C5 5-6115-240-15, Gen set, diesel engine.
C2 5-6115-243-10, Gen set, diesel engine.
C1 5-6115-248-10, Gen set, diesel engine.
C2 5-6115-253-10, Gen set, gasoline.
C2 5-6115-301-10, Gen set, diesel engine.
C2 5-6115-302-10, Gen set, diesel engine.
C6 9-325, 105-mm, M101 and M101A1.
C4 9-331A, 155-mm towed howitzer
C1 9-1055-212-12, 318-mm rocket launcher.
C3 9-1055-215-12, 115-mm multiple rocket launcher.
C15 9-1440-500-12/1, Guided missile launcher.
C3 9-2300-216-10, Gun, 175-mm, M107.
C2 9-2320-206-12, Truck tractor: 10-ton.
C2 9-2320-235-10, Truck, cargo: 2½ ton.
C7 9-2350-213-10, Gun, antitank, M56.
C3 9-3004, 8-inch towed howitzer.
C18 9-4935-508-35, Electronic shop No. 4.
C1 9-4935-509-34, Electromechanical shop.
C12 9-4935-515-35, Contact team shop.
C4 9-7218, Twin 40-mm M42.
C4 9-7402, Recovery vehicle.
C5 9-7604, Amphibious cargo carrier.
C11 9-8022, 2½-ton, cargo trucks.
C6 10-1602E, Truck, lift, fork.
C3 10-1628, Tractor, wheeled.
C4 10-3930-201-10, Truck, lift, fork.
C4 10-3930-215-10, Truck, lift, fork.
C1 10-3930-225-10, Truck, lift, fork.
C1 10-3930-227-10, Truck, lift, fork.
C3 10-3930-407-10, Tractor, wheeled.
C5 11-226, Radio sets AN/FRC-27, AN/TRC-34.
C5 11-286, Radio sets AN/VRC-8, AN/VRC-9 and AN/VRC-10.
C2 11-510, Radio set AN/URC-4.
C5 11-5038, Control group AN/GRA-6.
C5 11-5805-204-15, Communication patching panel.
C3 11-5805-240-12, Repeater, telephone AN/TCC-11.
C2 11-5805-250-10, Telegraph terminals AN/TCC-4 and AN/TCC-20.
C5 11-5820-203-15, Repeater set, radio AN/MRC-54(V).
C2 11-5820-357-10, Radio receiver R-390/URR.
C2 11-5820-401-10, Radio sets.
C4 11-5820-287-10, Radio sets.
C3 11-6740-200-10, Laboratory darkrooms.

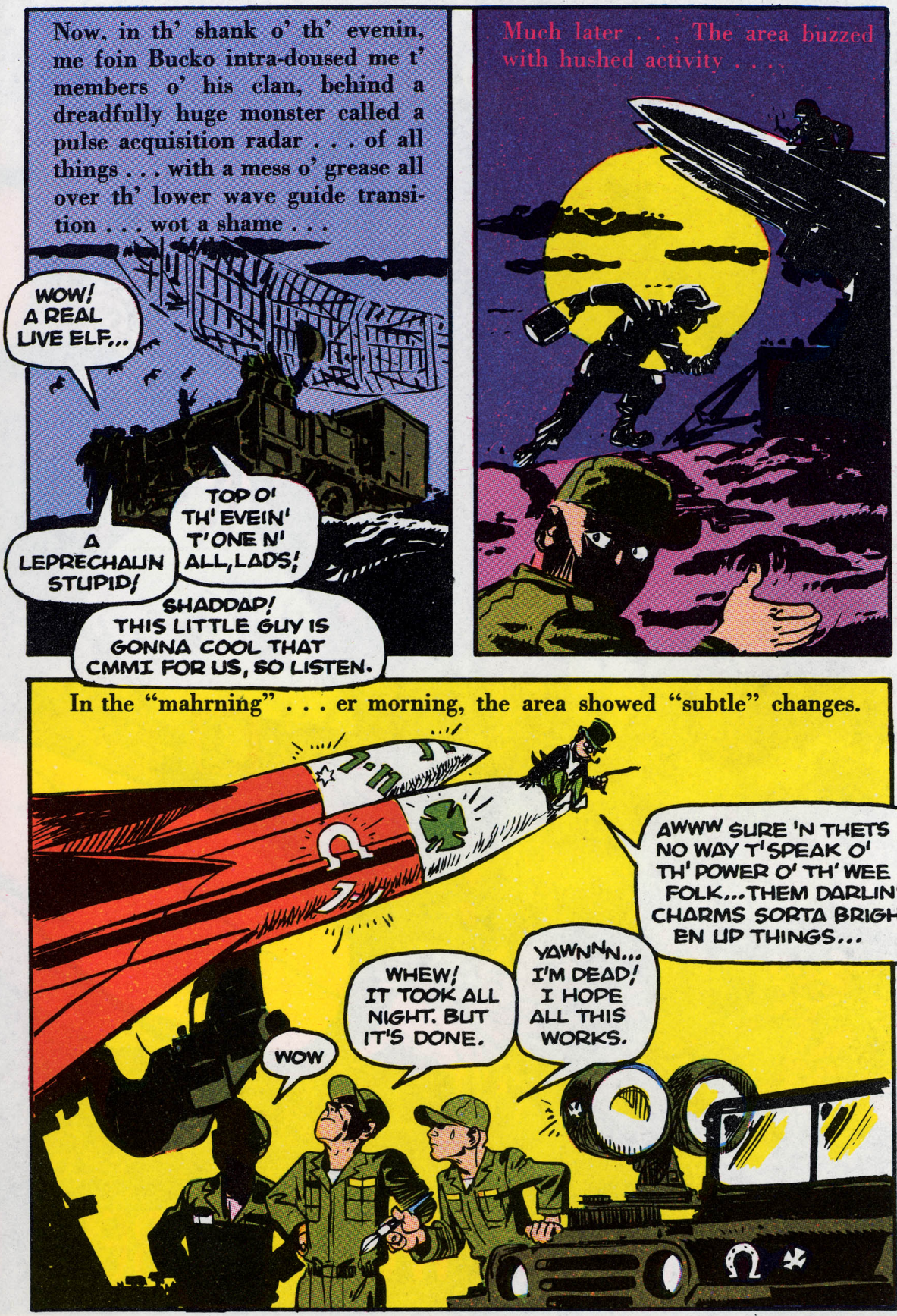


As foin an outfit as aany in the U.S. of America . . . they wuz except for one t'ing . . . 'twas the *main-tain-ence* . . . ah the poor lads, luvvly ee-quip-mint, but not a one as can move a wheel should the balloon (heaven forbid) go up in the mahrnin'.



Aye 'twas the corse of the CMMI upon thim . . . so I figgers here's a little business I can do . . .


HUH!
TOP O' THE MAHRNIN' BUCKO!! HOW ABOUT GIVEN ME TH' PRETTY LITTLE SHAMROCK Y'R CLUTCHIN' IN Y'R WEE HAND...
NO SIRREE! GET Y'R GRIMY CLAWS AWAY FROM THIS FOUR "LEAFER", 'CAUSE I RECCANIZE YOU...YOU... LEPRECHAUN, YOU!!
FAITH! 'N YA FOUND ME OUT... HOV' PITY ON TH' LITTLE FOLK AND I'LL MAKE Y' A PROPOSITION.
OK! I'M LISTENIN', 'N DON'T GET ANY CLOSER!!
WHEEE! 'N Y'R A CAGEY ONE, AIN'TCHA. WELL, IF Y'LL HAND OVER THOT WEE SHAMROCK, I'LL BE GRANTIN' Y' THREE WISHES IN ACCORDANCE W' TH' WAYS OF TH' WEE FOLK... BY TH' BY...BUCKO! I HEAR 'N Y'R COMIN' INTA A CMMI... SO'S I IMAGINE YU'LL BE LIKIN' TO MY SPORTIN' PROPOSITION.
YOU GOT A DEAL, "STRETCH". IF YOU DELIVER, I'LL GIVE YOU THE "FOUR LEAFER"!
THANKIN'YE, M'FOIN LADDYBUCK! BY TH' BY... I NAWTICED ALL Y'R BOLTS ON THIS FOIN MISSILE ARE OVER TORQUED ...TSK, TSK...


Now, in th' shank o' th' evenin, me foin Bucko intra-doused me t' members o' his clan, behind a dreadfully huge monster called a pulse acquisition radar . . . of all things . . . with a mess o' grease all over th' lower wave guide transition . . . wot a shame . . .
WOW! A REAL LIVE ELF...
A LEPRECHAUN STUPID!
TOP O' TH' EVEIN' T'ONE N' ALL, LADS!
SHADDAP! THIS LITTLE GUY IS GONNA COOL THAT CMMI FOR US, SO LISTEN.
Much later . . . The area buzzed with hushed activity . . .
In the "mahrning" . . . er morning, the area showed "subtle" changes.
AWWW SURE 'N THETS NO WAY T'SPEAK O' TH' POWER O' TH' WEE FOLK...THEM DARLIN' CHARMS SORTA BRIGHTEN UP THINGS...
YAWNNNN... I'M DEAD! I HOPE ALL THIS WORKS.
WHEW! IT TOOK ALL NIGHT. BUT IT'S DONE.
WOW

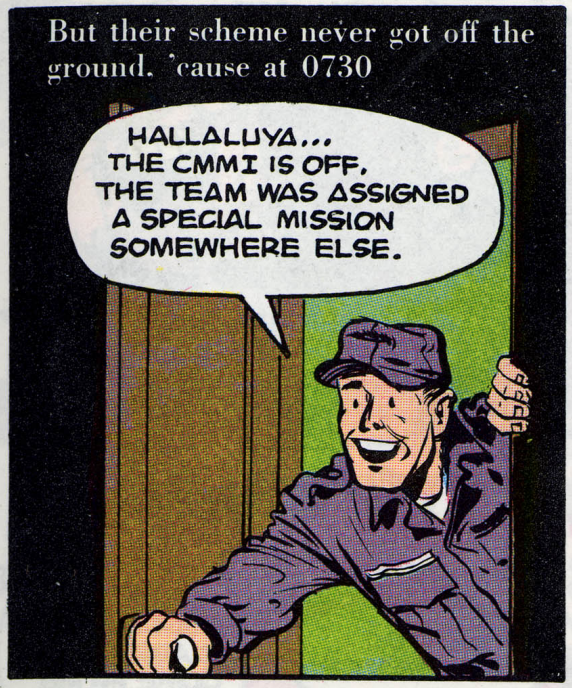
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

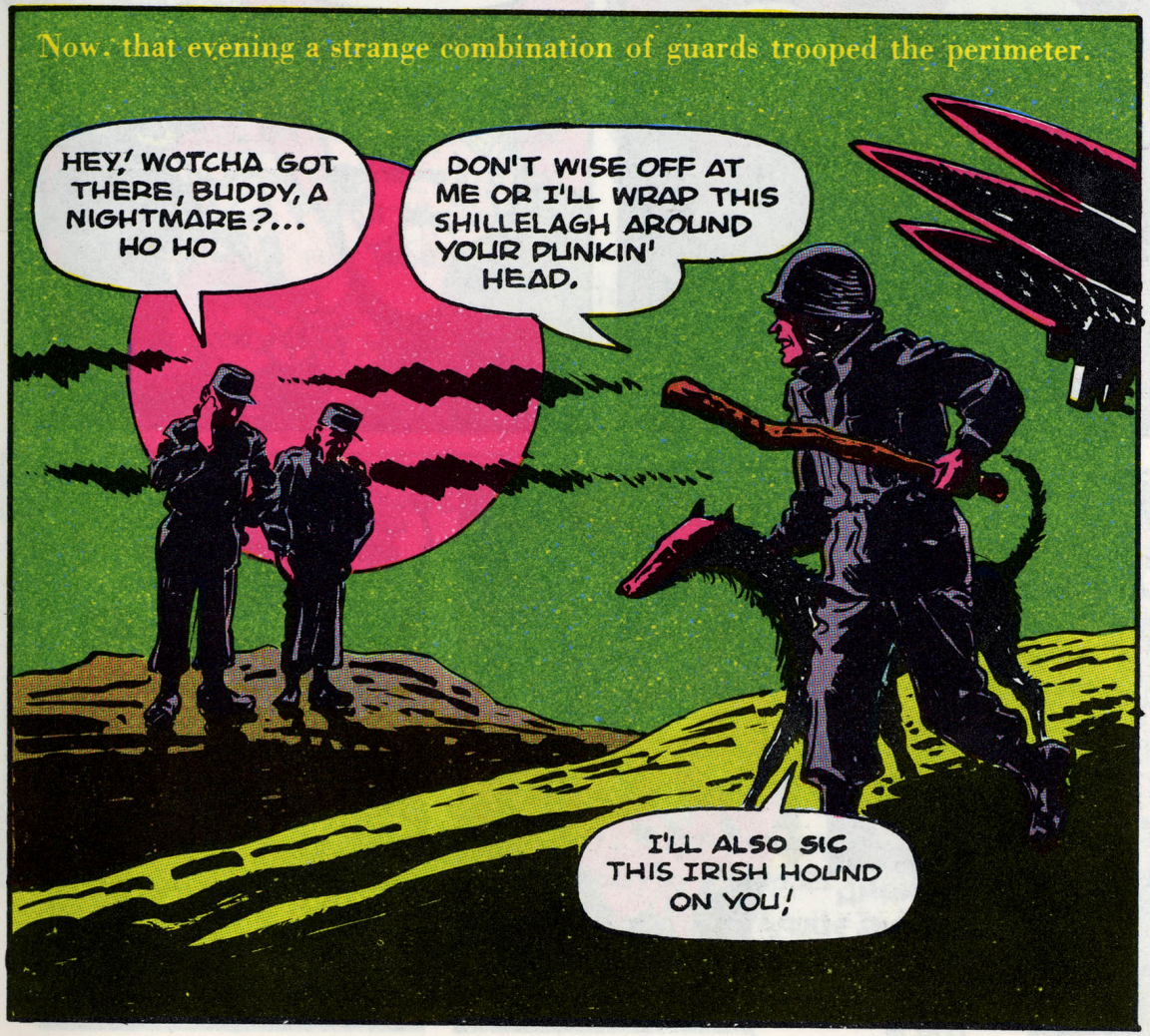
QUIPMENT ... *Take care of it*

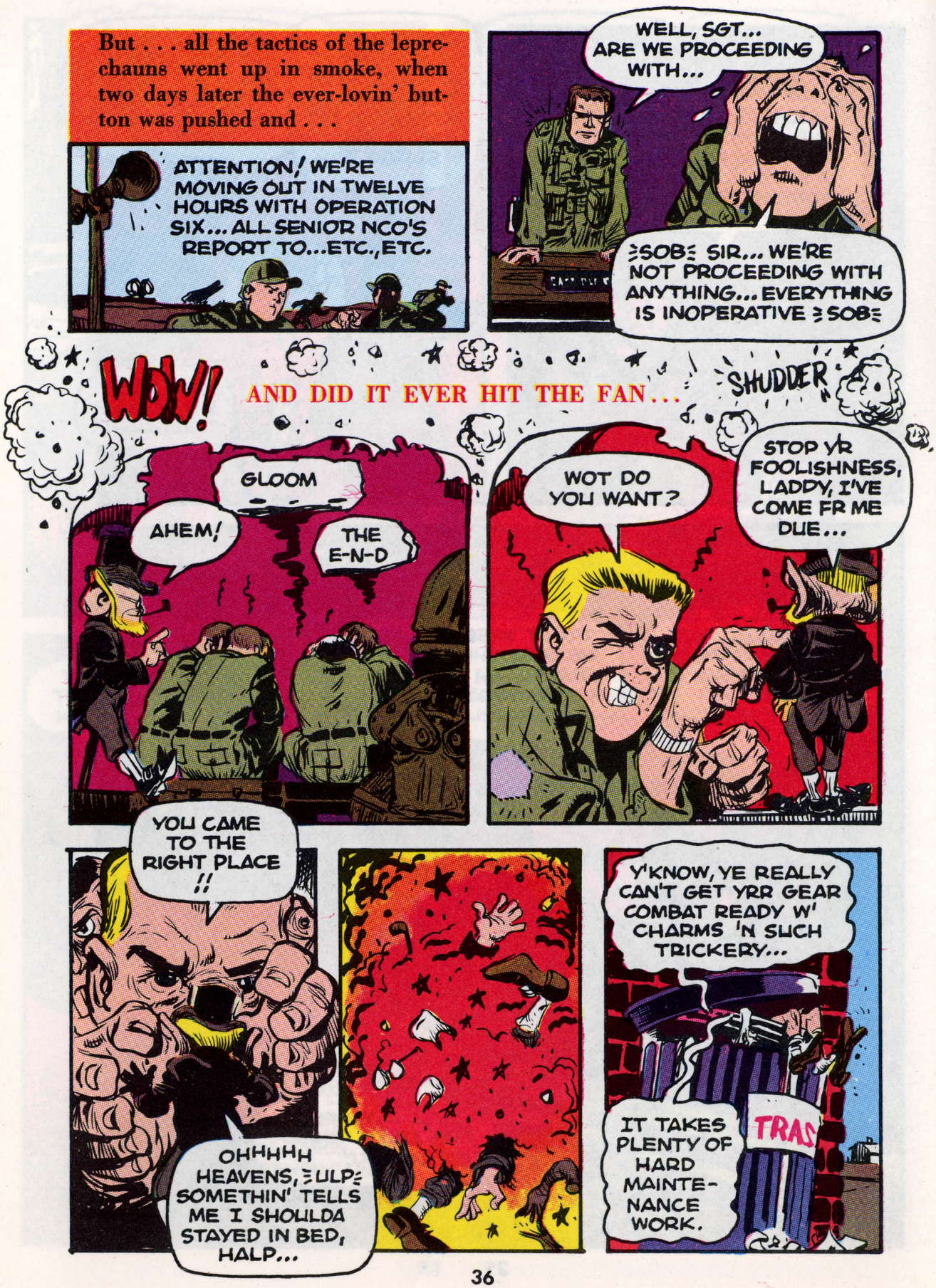
BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

PUFF PUFF
HEY! STRETCH... WHERE ARE YOU... OH! I JUST GOT THE WORD... CMMI TOMORROW! 0800.
HOV' NO FEAR, LAD, OIHM STICKIN' TO M'BARGIN, YULL SEE.
WOTCHA GOT THERE, STRETCH...
SURE 'N IT'S TH' VERRY THING TO TORRN TH' TRICK... A FAIRR LOT O' OBSCURE BUT VERY VALID ARMY REGULATIONS WITH THESE TUCKED IN Y'R MEMORY, Y'R IN LIKE... ER FLYNN...
V-E-R-Y SNEAKY! THEY'LL NEVER KNOW WOT HIT 'EM.
UN IF ANYTHING GOES AMISS, I'LL BE STANDIN' ON Y' SHOULDER, BUCKO.
HEY, FELLAS! I GOT THE "COOP-DE-GRASS" LISTEN TO THIS.
GET IN OUTA THE HOT SUN... 'N LET'S HEAR IT.
YEAH... TOMORROW IS "THE" DAY!


But their scheme never got off the ground. 'cause at 0730
HALLALUYA... THE CMMI IS OFF. THE TEAM WAS ASSIGNED A SPECIAL MISSION SOMEWHERE ELSE.

HEY! ALL THE EQUIPMENT IS COVERED WITH THEM CHARMS. WOT DO WE DO WITH 'EM, SARGE?
WE MAKE SURE NO ONE SPOTS 'EM. THAT INSPECTION TEAM MIGHT HIT THE NEXT DAY.
THAT'S A DARLIN' IDEA...
TONITE WE DOUBLE THE GUARD.


Now. that evening a strange combination of guards trooped the perimeter.
HEY! WOTCHA GOT THERE, BUDDY, A NIGHTMARE?... HO HO
DON'T WISE OFF AT ME OR I'LL WRAP THIS SHILLELAGH AROUND YOUR PUNKIN' HEAD.
I'LL ALSO SIC THIS IRISH HOUND ON YOU!

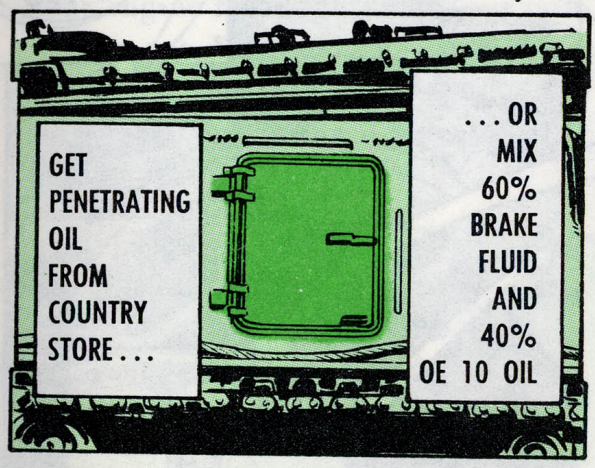

But . . . all the tactics of the leprechauns went up in smoke, when two days later the ever-lovin' button was pushed and . . .
ATTENTION! WE'RE MOVING OUT IN TWELVE HOURS WITH OPERATION SIX... ALL SENIOR NCO'S REPORT TO...ETC., ETC.
WELL, SGT... ARE WE PROCEEDING WITH...
SOB SIR... WE'RE NOT PROCEEDING WITH ANYTHING... EVERYTHING IS INOPERATIVE SOB
WOW!
AND DID IT EVER HIT THE FAN...
SHUDDER
GLOOM
AHEM!
THE E-N-D
WOT DO YOU WANT?
STOP YR FOOLISHNESS, LADDY, I'VE COME FR ME DUE...
YOU CAME TO THE RIGHT PLACE !!
OHHHHH HEAVENS, ULP SOMETHIN' TELLS ME I SHOULDA STAYED IN BED, HALP...
Y'KNOW, YE REALLY CAN'T GET YRR GEAR COMBAT READY W' CHARMS 'N SUCH TRICKERY...
IT TAKES PLENTY OF HARD MAINTE-NANCE WORK.
TRAS

M88 VTR HINGE LUBING

Everything hinges on the way you lube the personnel door hinges of your M88 VTR. They can work easy or hard—take your choice.

If you want 'em to work easy, it'll mean some hard work for you—at least at first. Once you get 'em in good shape it's no trick to keep 'em that way. Just oil 'em good with PL oil like it says in the LO, except you should do it quarterly or oftener.

If they're pretty rusty to begin with, get some penetrating oil from the country store or your support outfit. If your



country store is too far out in the country, try a mixture of 60 percent brake fluid and 40 percent OE 10 oil.

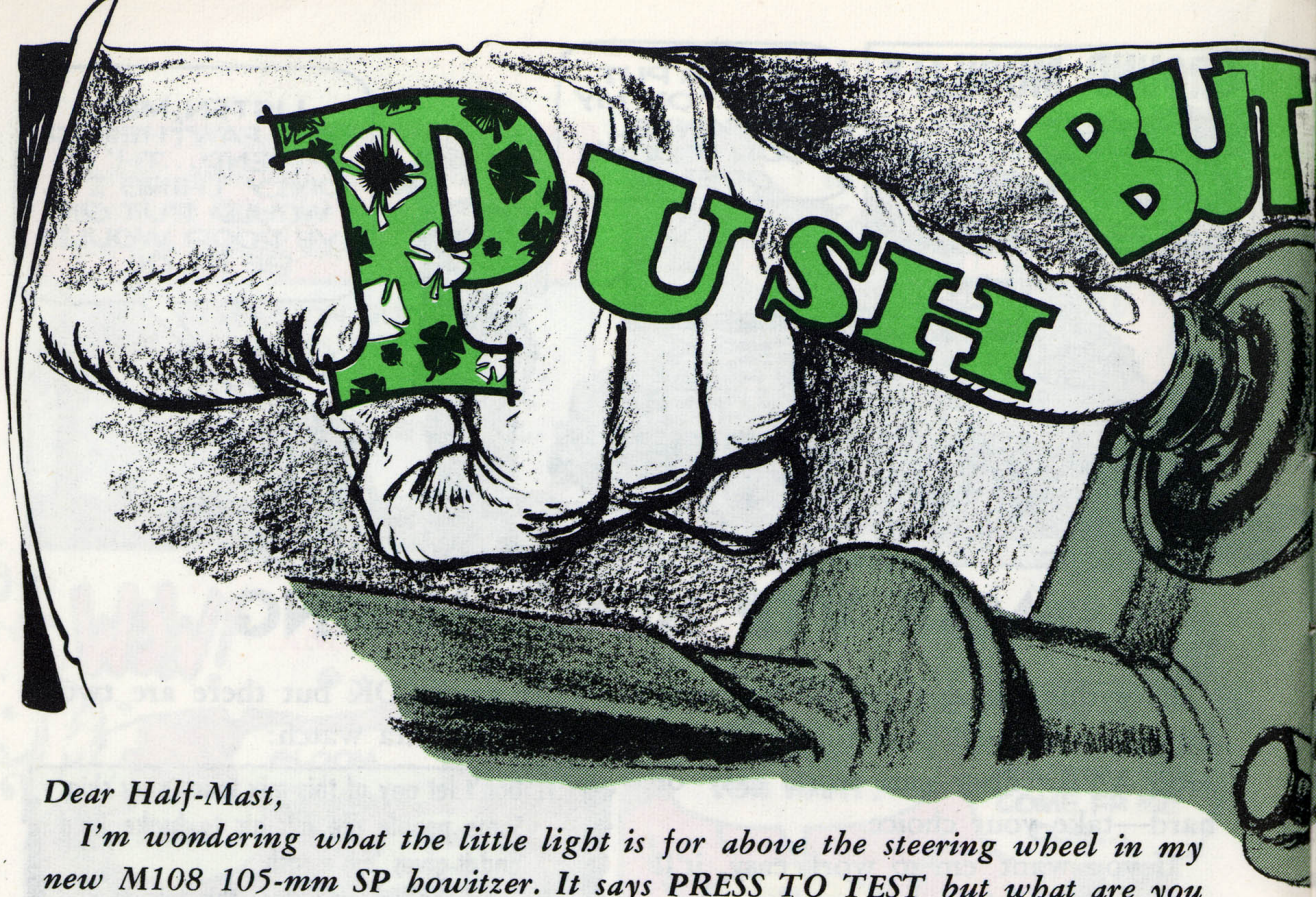
This works OK but there are two things you gotta watch:

1. Don't let any of this mix touch your skin. Some people are allergic to brake fluid and it gives 'em a rash.
2. Label the can you store this mix in and make sure nobody uses it by mistake for something else.

Force your mixture into the hinge with a steady flow of an oil squirt gun. It'll also help to brush the mix along the top and bottom of the hinges with a stiff brush as you move the door back and forth.

The hinges need to be worked on during damp weather or whenever the vehicle's been washed or rained on.

When you get 'em so they work as easy as a stripper's zipper, keep on lubing with PL oil. It has more staying power than any mix oil or penetrating oil.



Dear Half-Mast,

I'm wondering what the little light is for above the steering wheel in my new M108 105-mm SP howitzer. It says PRESS TO TEST but what are you testing when you press it? I can't find any dope on this in my operator's TM.

SSgt E. A. G.

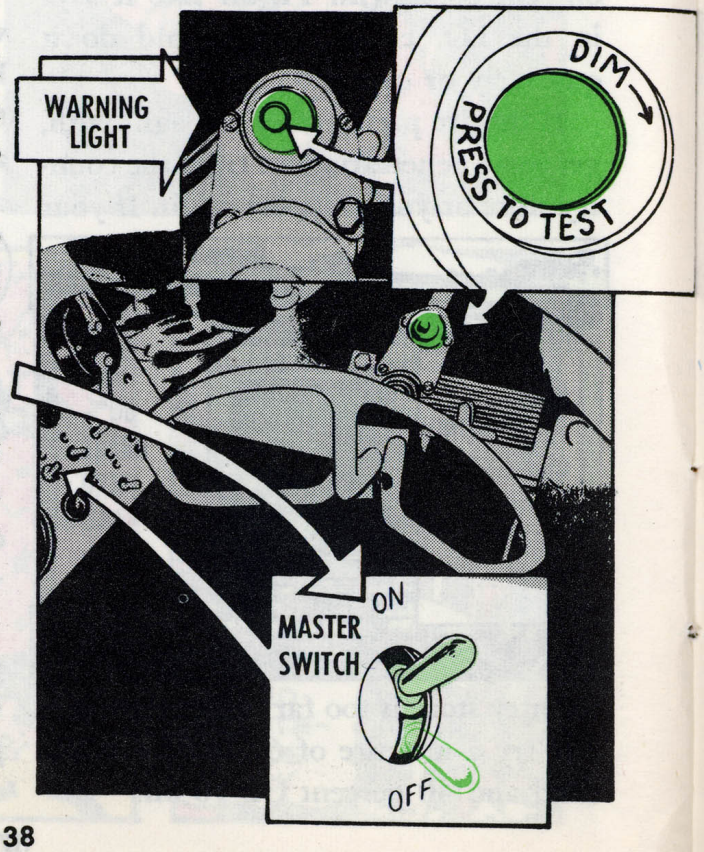
Dear Sergeant E. A. G.,

This light is to warn you if the oil in either your engine or transmission is too hot or if the oil pressure is too low.

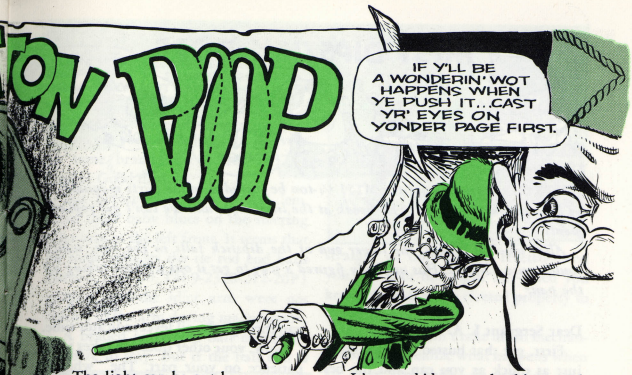
This light will go on when you flip the master switch ON but it should wink out when you bring the engine to a high idle.

If it comes on while you're in normal operation it warns you that something is wrong. Take a look at the gages on your instrument panel to find out where the trouble is.

This warning light is the guardian angel of an engine-transmission worth many thousands of dollars—so you want to be sure it's in shape to do the job.



PUSH BUTTON POOP



Dear Half-Mast,

I'm wondering what the little light is for above the steering wheel in my new M108 105-mm SP howitzer. It says PRESS TO TEST but what are you testing when you press it? I can't find any dope on this in my operator's TM.

SSgt E. A. G.

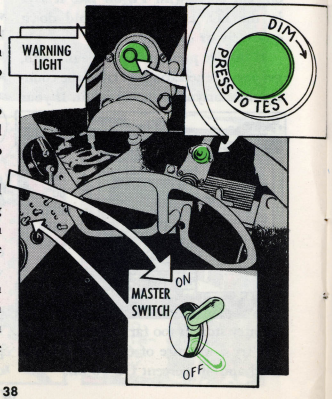
Dear Sergeant E. A. G.,

This light is to warn you if the oil in either your engine or transmission is too hot or if the oil pressure is too low.

This light will go on when you flip the master switch ON but it should wink out when you bring the engine to a high idle.

If it comes on while you're in normal operation it warns you that something is wrong. Take a look at the gages on your instrument panel to find out where the trouble is.

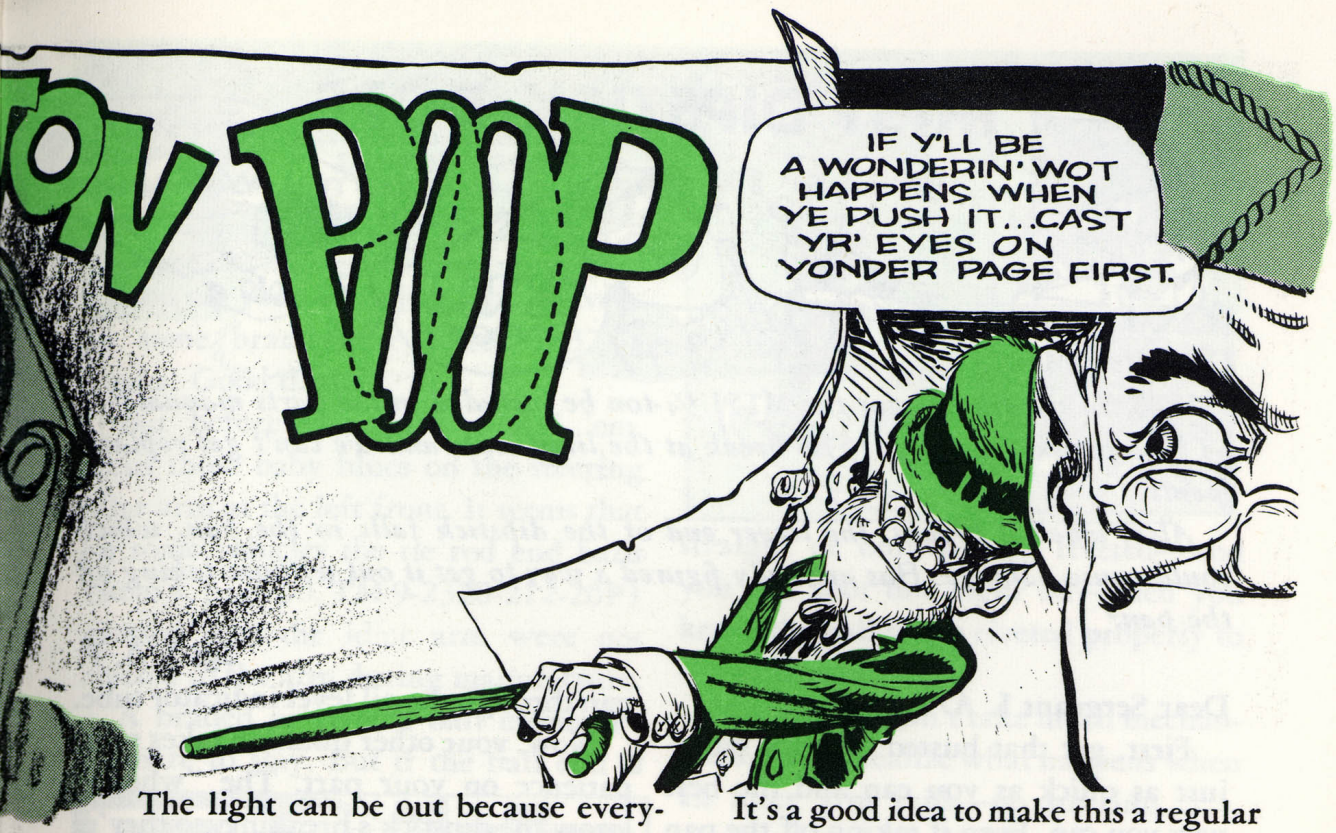
This warning light is the guardian angel of an engine-transmission worth many thousands of dollars—so you want to be sure it's in shape to do the job.



The light can be out because everything is OK with your engine and transmission or the light can be out because of a burned filament in the bulb—in which case it will give you no warning—and you can ruin your vehicle.

That's where the PRESS TO TEST comes in. It lets you know your bulb is on the job and ready to flash you a warning. To test the bulb, bring your engine to a high idle. Your bulb will be out. Without taking your foot off the throttle, press a thumb on the warning light. If the bulb's OK, it'll light up.

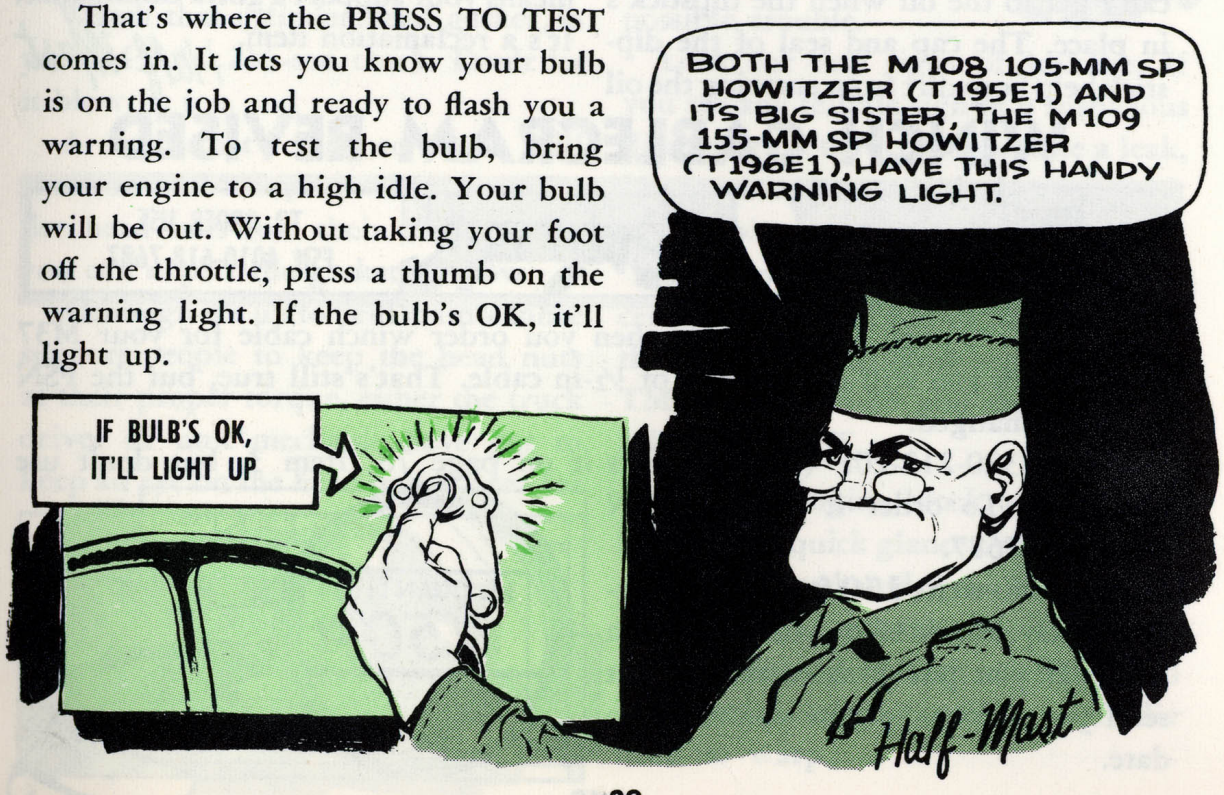
It's a good idea to make this a regular part of your before-operations countdown. Likewise, mash your thumb down on it every so often during the day's operations to be sure you're getting the protection it's supposed to give you.



The light can be out because everything is OK with your engine and transmission or the light can be out because of a burned filament in the bulb—in which case it will give you no warning—and you can ruin your vehicle.

That's where the PRESS TO TEST comes in. It lets you know your bulb is on the job and ready to flash you a warning. To test the bulb, bring your engine to a high idle. Your bulb will be out. Without taking your foot off the throttle, press a thumb on the warning light. If the bulb's OK, it'll light up.

It's a good idea to make this a regular part of your before-operations countdown. Likewise, mash your thumb down on it every so often during the day's operations to be sure you're getting the protection it's supposed to give you.



M151 DIPSTICK DOPE

Dear Half-Mast,

Will the oil dipstick for the M151 ¼-ton be included in the parts manual? The dipsticks in our M151's break at the limit stop, and we can't get replacements.

Also, when it breaks, the lower end of the dipstick falls in the pan, which could cause damage. Has anybody figured a way to get it out without taking off the pan?

Sgt I. A. F.

Dear Sergeant I. A. F.,

First, get that busted dipstick out—just as quick as you can and the best way you can. Even if taking off the pan is the only way, get it out! And, check every once in a while to be sure the one you're using's not busted.

That damage you mentioned includes dirt in the oil. Like, foreign matter can't get to the oil when the dipstick's in place. The cap and seal of the dipstick help keep dirt from entering the oil pan through the oil level indicator tube.

Now, your other question takes some patience on your part. The "wheels" know the dipstick's breaking, so they're redesigning it. It'll be made of heavier material, and the method of joining the two ends will be improved.

The dipstick (Ord. No. 8754192) won't be in the supply system, which means your support's gotta cannibalize. It's a reclamation item.

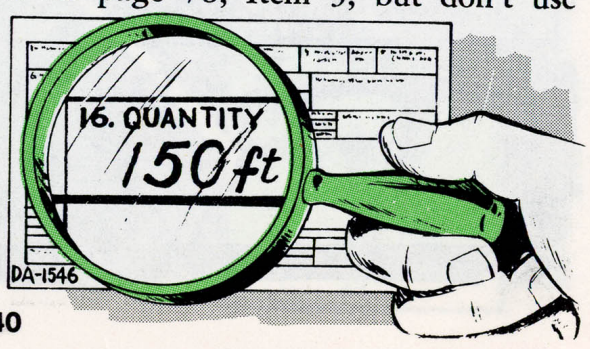
Half-Mast

WINCH CABLEGRAM REVISED

In PS 127, page 17, we said when you order winch cable for your M37 ¾-ton truck you will get 150 feet of ½-in cable. That's still true, but the FSN has been changed.

TM 9-2320-212-20P (Feb 60) lists it on page 78, Item 3, but don't use that FSN. To order it you use FSN 4010-618-7687.

Be sure to write **150 ft** in the "Quantity" entry, Block 16 on your DA Form 1546. If you put 1 there they'll just send you 1 foot. So now you're up to date.

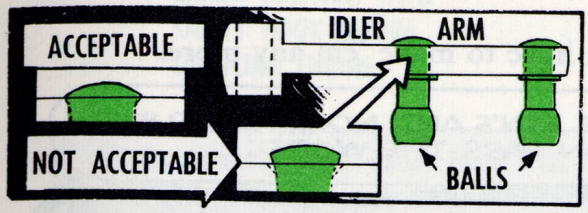


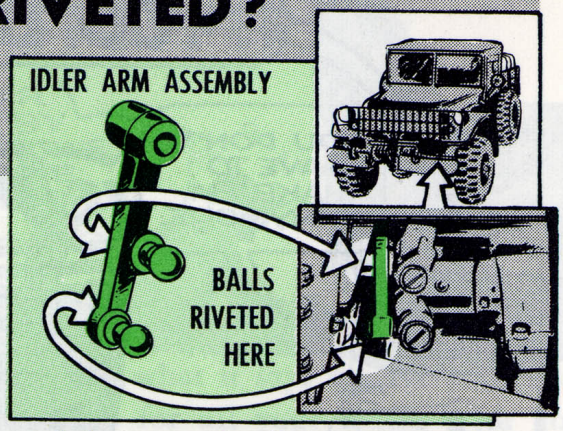
BALLS RIVETED?

You say your outfit just took delivery on some brand new ¾-ton M37B1 trucks! Good deal.

But before you start to roll 'em, focus those baby blues on the steering idler arm at the left front. It seems that on some vehicles the tie rod end balls (item 4, page 60, TM 9-2320-212-20P) pressed into the idler arm were not riveted to the arm during manufacture.

A braded or riveted ball means it's in there to stay. But if the ball end is

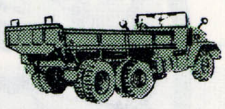




straight or only lightly riveted—and you can spot one right off—then you know the ball is not riveted properly to the idler arm.

'Course it doesn't take much mechanical savvy to realize what happens when an idler arm fails—no steering . . . maybe no vehicle. So if you spot a ball that isn't riveted you want to make with a DA Form 2407 work request to your support, on the double.

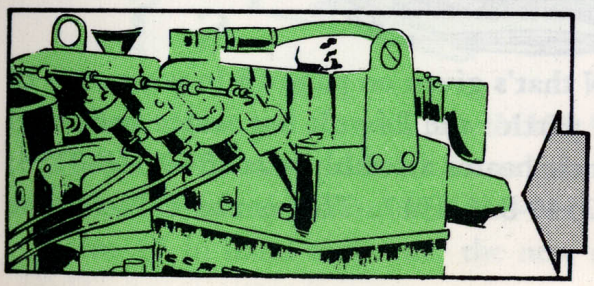
DON'T BLOW YOUR GASKET



Watch that cylinder head gasket on your M35A1 2½-ton truck. Don't let it blow its top.

A head that's torqued right will cause no problems, but when the cylinder head nuts lose their torque, then you can expect the gasket to blow.

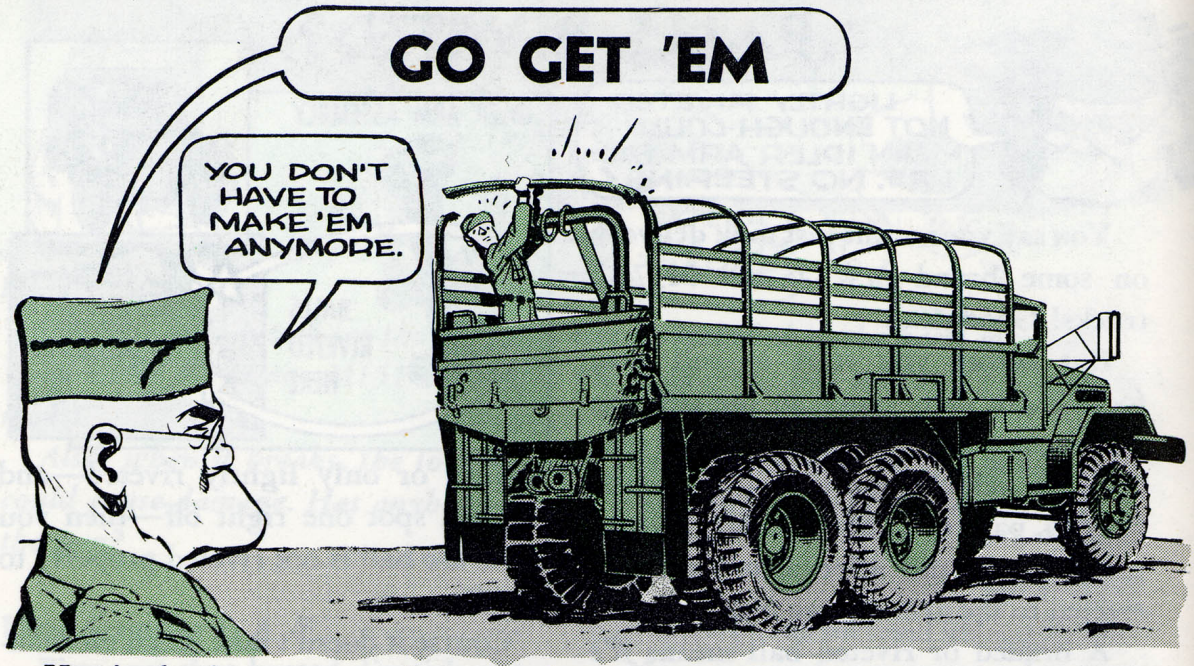
Although it's up to field maintenance support people to keep the head nuts at their proper torque, either the truck driver or unit mechanic have got to keep an eye on the head gasket area for possible trouble.



Look for any signs of leakage. If you see any telltale sign of a suspicious discoloration that could indicate a leak, let your support people know . . . it may be time for a re-torque job.

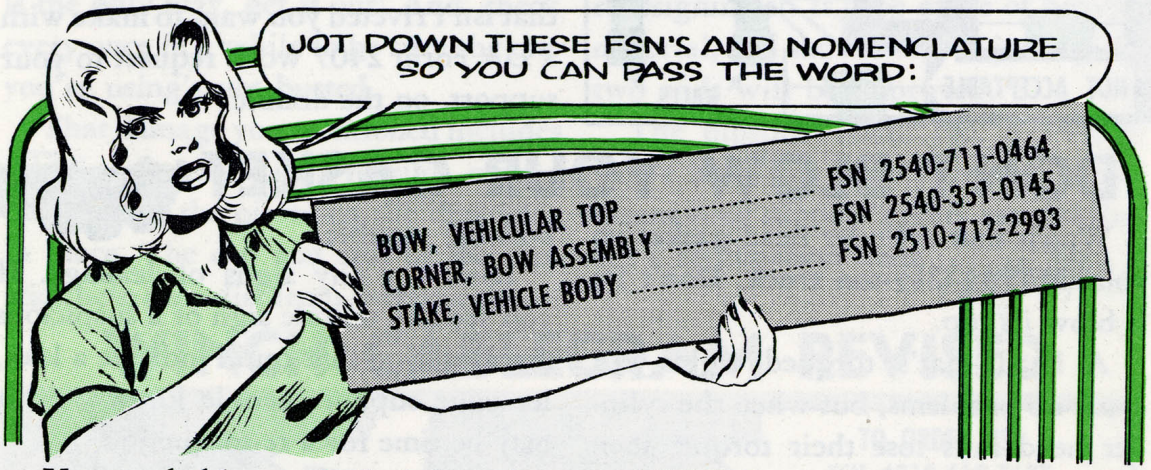
The torque on the head bolts is real critical. The procedures for torquing the cylinder head bolts are covered in TM 9-2815-204-35 and they must be followed to a T.

Give the engine block and cylinder head joint a quick glance every time you stick your head under the hood—then about once a month give it a closer look. The idea is to catch any loose head bolts before they cause the cylinder head to warp.



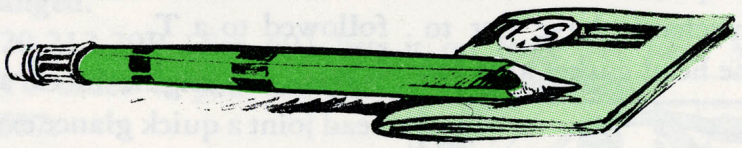
Here's the latest on getting cross bows for your M125 10-ton truck cargo body.

The news has just hit that you don't have to make 'em any more.



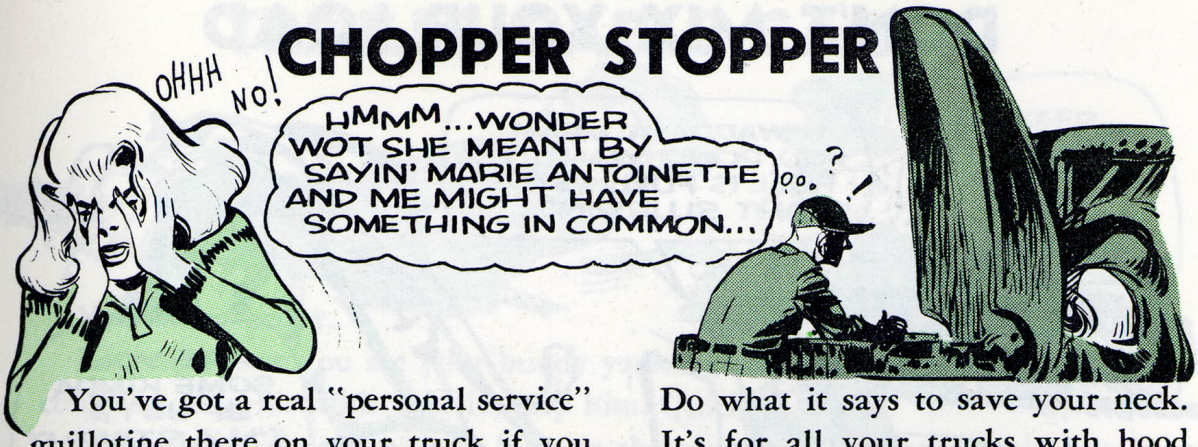
You probably won't find these items and FSN's in any TM or SNL you have —they're in the new TM 9-2320-206-20P that's on its way to you.

HEATER FSN CHANGE



Get out a pencil and change the FSN that's given on page 18 in your copy of PS 129 for the heater assembly that's part of the 24-volt hot water personnel heater kit. The FSN for this wheeled vehicle heater assembly was 2540-318-0155; this has now been exhausted to FSN 2540-846-4917. This is the FSN for the preferred heater assembly.

CHOPPER STOPPER

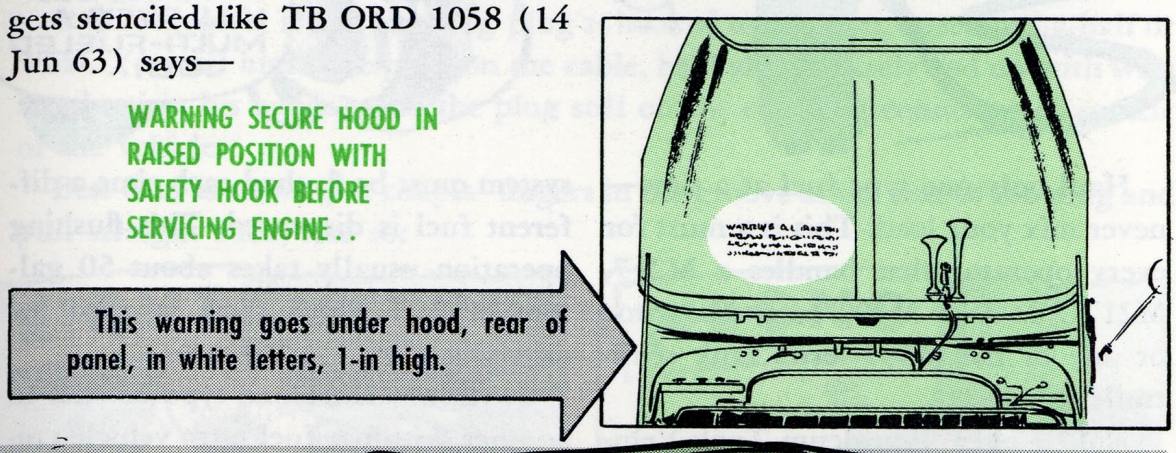


You've got a real "personal service" guillotine there on your truck if you don't use your hood safety locks.

To remind you, be sure your truck gets stenciled like TB ORD 1058 (14 Jun 63) says—

WARNING SECURE HOOD IN RAISED POSITION WITH SAFETY HOOK BEFORE SERVICING ENGINE..

Do what it says to save your neck. It's for all your trucks with hood safety locks. TM 9-213 gives stenciling info.



FREE PEDALING

You may have noticed that TM 9-8014, Change 6 (Jun 63) gives ¾ to 1 inch free travel for the Jeep service brake, and para 233a in the TM gives ½ inch. No sweat. Either will do the job, but the half-inch free travel will give you better braking.

YOUR LATEST DATE

So you just got a brand new M151 ¼-ton truck? But what edition of TM 9-2320-218-10 came with it? Some recent M151's have been landing in units with the old Operator's Manual dated May 1960. If that's your problem, take a DA Form 17 in hand and order the new edition [Oct 62] with Change 1 [Mar 63].

DON'T MIX YOUR LOAD

Haul only one type fuel at a time—never mix your load. This is a must for every operator that handles a M217, M217C, M49 or M49C fuel tank truck or any of the M131-series tank semi-trailers.

TM 10-1113 "Petroleum Tank-Vehicle Operation" (Sep 59), para 71, spells it out like so: ". . . Commingling (mixing) in tank vehicles should be avoided. This can be done by loading only one fuel at a time and keeping vehicles in the same service as far as possible."

One big reason for not carrying mixed loads of fuel is that the filtering system must be flushed each time a different fuel is dispensed. This flushing operation usually takes about 50 gallons of fuel which can't be used for anything else.

Switching from one type of fuel to another within a fuel tank vehicle creates mixtures that should not be dispensed. Undesirable or even hazardous changes can be made in the fuel's octane or performance rating, vapor pressure and flash point.

TRAILER CABLE CARE

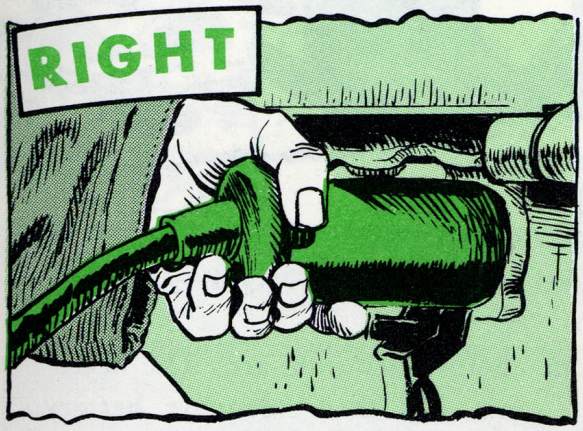
You know better.

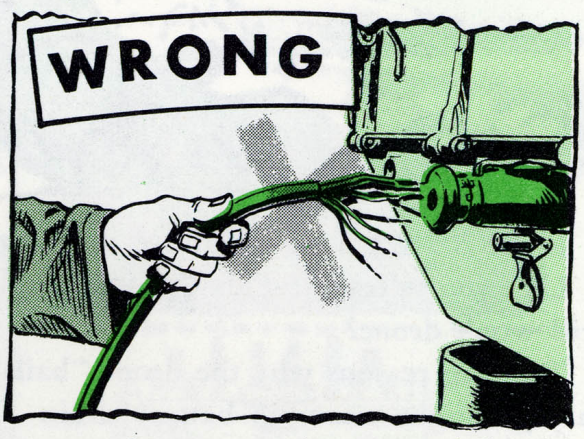
But, next time you see your buddy yanking the cable to release the trailer coupling plug from his vehicle, stop him. Quick!

He probably didn't put any lube on the plug shell to begin with, but if he yanks the cable, he's headed for more trouble than he can handle. It'll cost him, and it'll be more than just a chewing out.

It don't matter if the coupling plug's hooked to a ¼-ton, duece-and-a-half or what. You tell him if he pulls on the cable, he'll almost surely end up with wire spaghetti in his hands—and the plug still on the coupling connector receptacle of the vehicle.

Best deal is to wrap a coupla' fingers in the groove at the rear of the plug and pull straight back, like so:





Just remind him that he's got to disengage the stop on the cover of the connector receptacle before he does any pulling. While we're with the stop, that has to slip into its groove in the coupling plug when the connection's made. Otherwise, the cable and plug just might bounce off while the trailer's being transported.

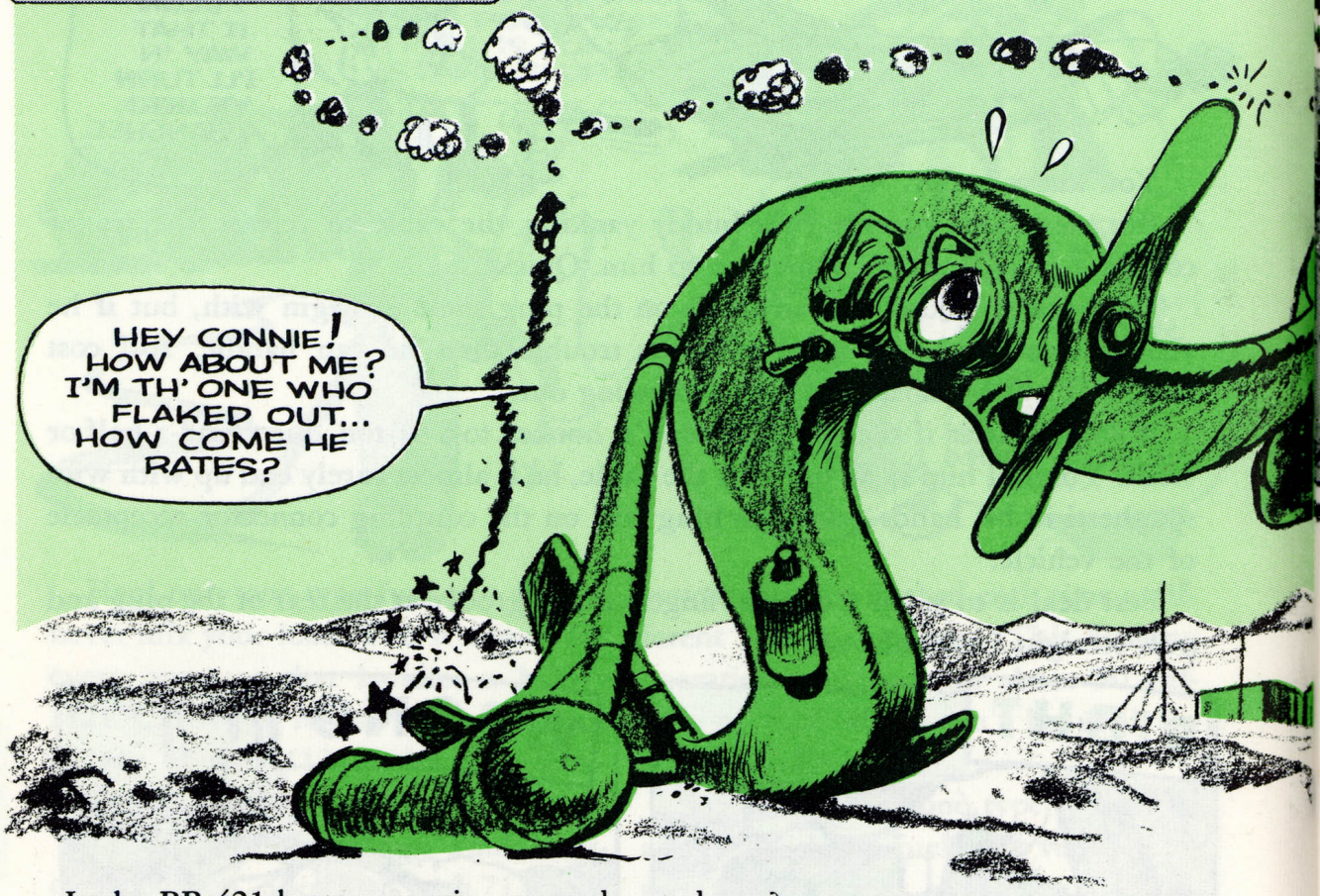
If your buddy gripes about the tight fit, remind him it's that way to insure waterproofing. It makes it a little tougher to get the plug and receptacle apart and together, but like we said earlier, a little lube helps a lot.

Namely, insulating compound, electrical, FSN 5970-224-5276 (8 oz. tube). Put a thin smear on the tips of the plug before making the connection, and it should go in and out with practically no sweat.

In a pinch, cutting oil, FSN 9150-234-5198, will do just about as well.

You reckon he'll get the point?

DRONE BATTERY



Is the BB-421 battery putting your drone down?

Like, you've tried just about everything, and your OA-2343/MQM-57A drone still won't drone?

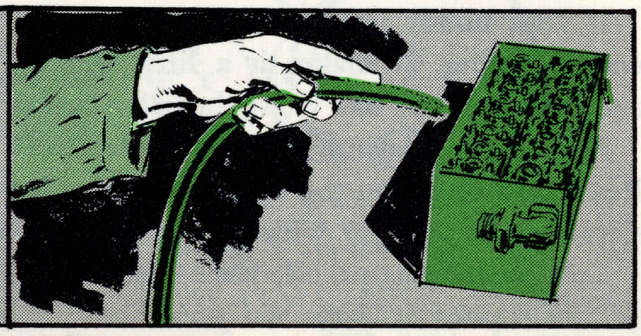
Two big reasons why the drone "bails out" before her time are: The necessary pre-flight warm-up battery drain . . . and, less than adequate battery maintenance.

Like we said back in PS 116, use an auxiliary BB-421 for the warm-up. Don't use the BB-421 internal drone battery until just before launching.

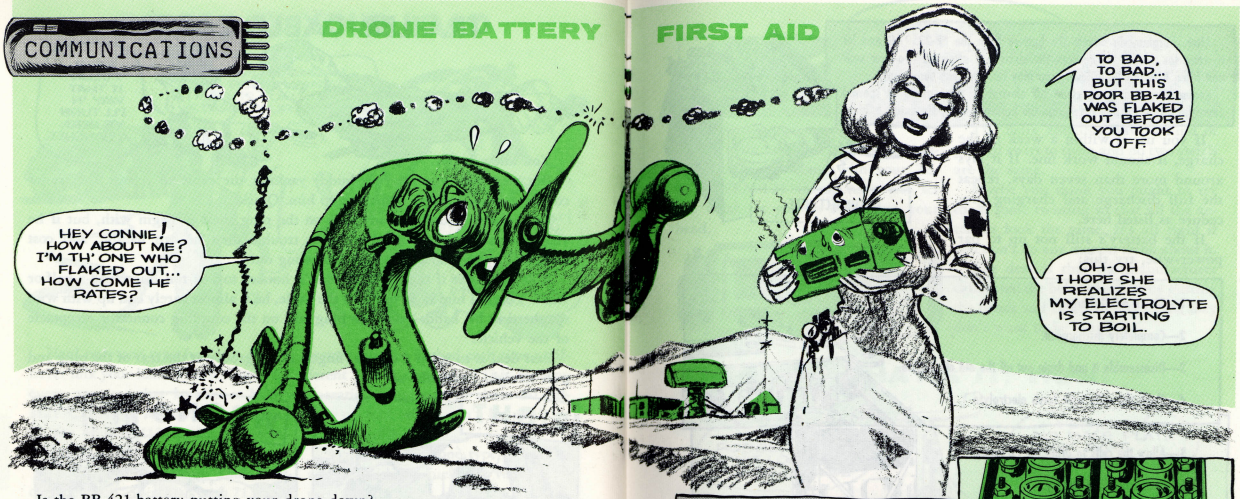
Next best thing to a crying towel is to keep your BB-421's in shape with the following methods. They're in addition to info in TM 11-5895-246-12.

When you take the battery out of your drone the first thing you want to do is to discharge it . . . all the way.

Then, clean it with a dry nylon brush (the brush is in your TK-90/G). Clean everything you can get to, without taking the battery apart. It's OK to use an air hose on loose deposits.



DRONE BATTERY FIRST AID



Is the BB-421 battery putting your drone down?

Like, you've tried just about everything, and your OA-2343/MQM-57A drone still won't drone?

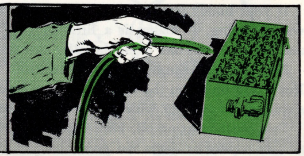
Two big reasons why the drone "bails out" before her time are: The necessary pre-flight warm-up battery drain . . . and, less than adequate battery maintenance.

Like we said back in PS 116, use an auxiliary BB-421 for the warm-up. Don't use the BB-421 internal drone battery until just before launching.

Next best thing to a crying towel is to keep your BB-421's in shape with the following methods. They're in addition to info in TM 11-5895-246-12.

When you take the battery out of your drone the first thing you want to do is to discharge it . . . all the way.

Then, clean it with a dry nylon brush (the brush is in your TK-90/G). Clean everything you can get to, without taking the battery apart. It's OK to use an air hose on loose deposits.



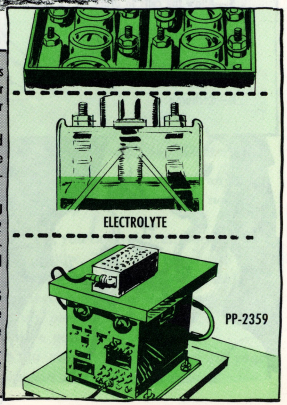
Inspect the battery for leaks, cracks, broken leads and connectors. Make your authorized repairs, or ship the battery off to your direct support for higher echelon work.

If the battery's in good shape, or you've repaired it, remove the vent caps and bring the electrolyte level to ¼ inch above the plates. FSN 6810-543-4041 will get you fresh electrolyte.

Fully discharge the battery with the MX-1678/U resistor assembly. Or, discharge it for at least 12 hours with a 100 or 150-watt bulb, in a weather-proof socket, with leads that go to the positive and negative terminals of the battery.

Then, charge it for two hours with the PP-2359/G battery charger. Forget the automatic timer on the charger, since it's only set for 90 minutes. Follow the manual charging procedure in TM 11-5895-246-12.

A two-hour charge should give the drone at least 35 minutes' flight time.



MORE

FIRST AID

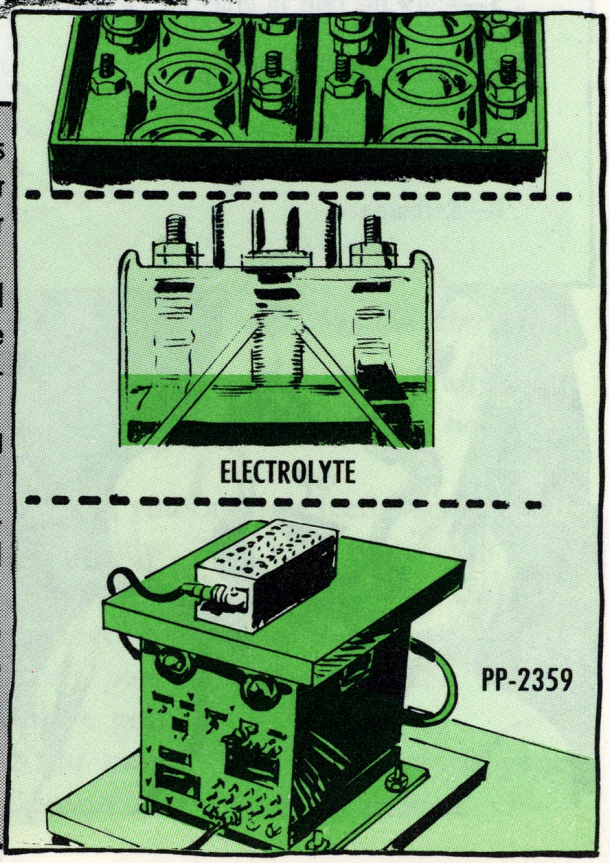
Inspect the battery for leaks, cracks, broken leads and connectors. Make your authorized repairs, or ship the battery off to your direct support for higher echelon work.

If the battery's in good shape, or you've repaired it, remove the vent caps and bring the electrolyte level to ¼ inch above the plates. FSN 6810-543-4041 will get you fresh electrolyte.

Fully discharge the battery with the MX-1678/U resistor assembly. Or, discharge it for at least 12 hours with a 100 or 150-watt bulb, in a weather-proof socket, with leads that go to the positive and negative terminals of the battery.

Then, charge it for two hours with the PP-2359/G battery charger. Forget the automatic timer on the charger, since it's only set for 90 minutes. Follow the manual charging procedure in TM 11-5895-246-12.

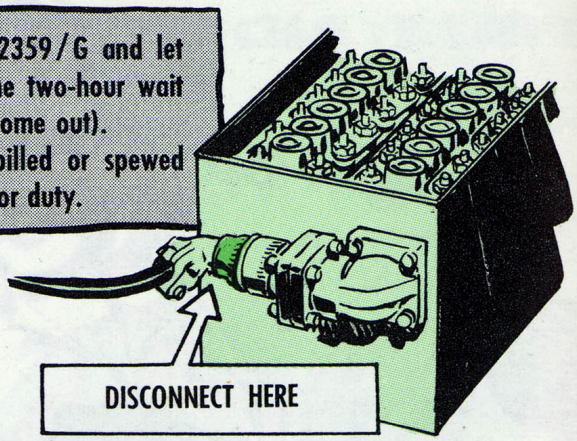
A two-hour charge should give the drone at least 35 minutes' flight time.



PS MORE

After charging, disconnect the battery from the PP-2359/G and let it stand for two hours. Recheck the electrolyte after the two-hour wait and bring it to the ¼-in level (you may have to take some out).

Replace the vent caps; clean off electrolyte that spilled or spewed over; put on the battery cover, and the battery's ready for duty.



If you use it within a week of the charge, it should work fine. If it lays around more than seven days, repeat the full discharge and charging procedure as listed here.

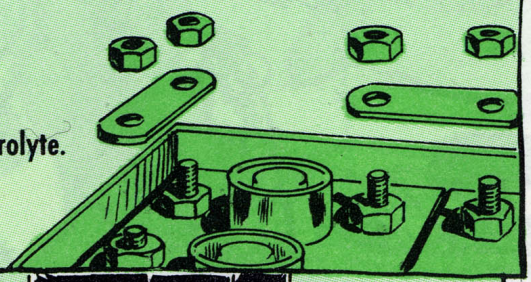
If the battery's still not up to par power-wise, try this:

1—Give it a full charge.

2—Completely discharge it.

3—Disassemble it and drain out all the old electrolyte.

4—Flush the cells with fresh electrolyte.

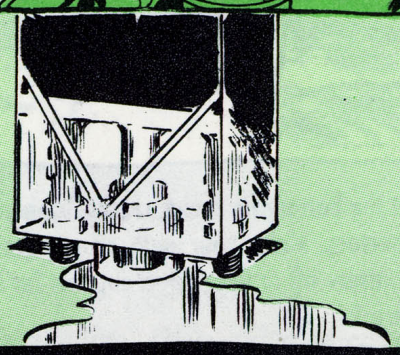


5—Allow the cells to drain for 24 hours.

6—Reassemble the battery.

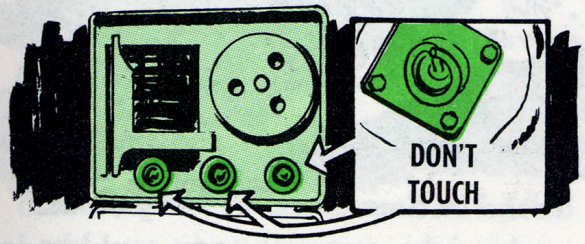
7—Refill the cells.

8—Recharge it.



They make you wonder.

The helix antennas in the three antenna cells that come with your TS-1334/URM-125 transponder test set are what set you to scratching your head.

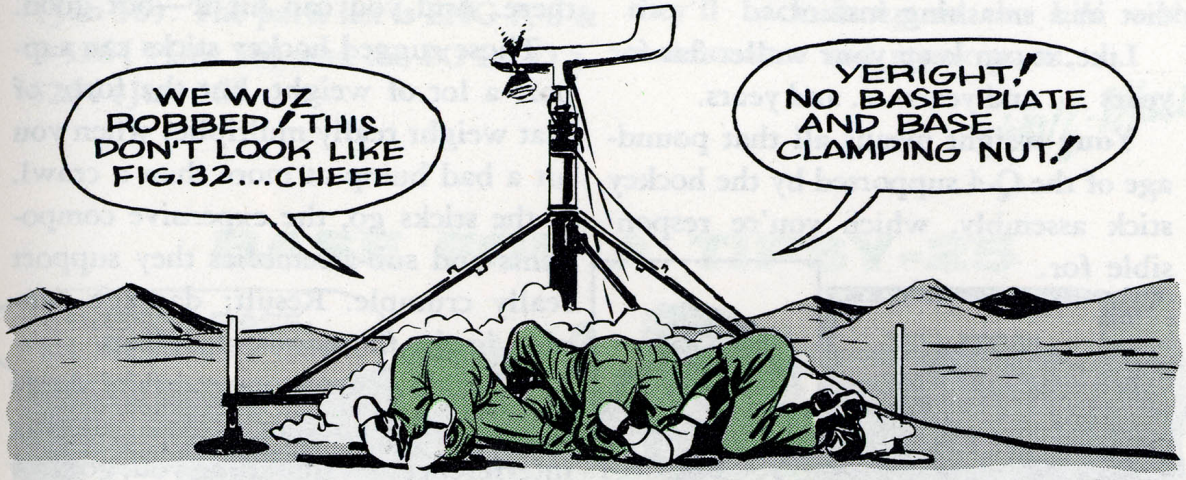


The helix antennas have a kind of pig tail swirl to them and no two swirls are the same.

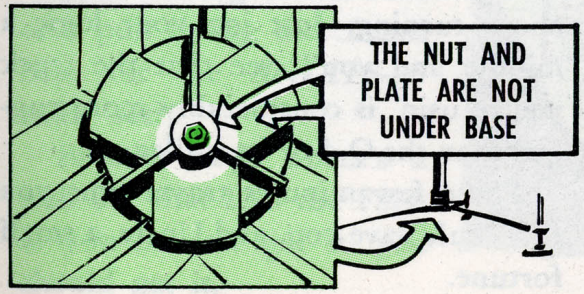
Maybe you think you ought to try to do some twisting so that all the antennas look the same. It's all right if you don't do any more'n think about it.

The deal is that the manufacturer calibrated the helix antennas by putting the bends and twists in them. And they don't want to be changed.

SO THAT'S IT, HUH!



You say the portable mast of your AN/PMQ-6 wind measuring set just doesn't stack up like it shows in Fig 32 of TM 11-6660-203-10 (Dec 59)?

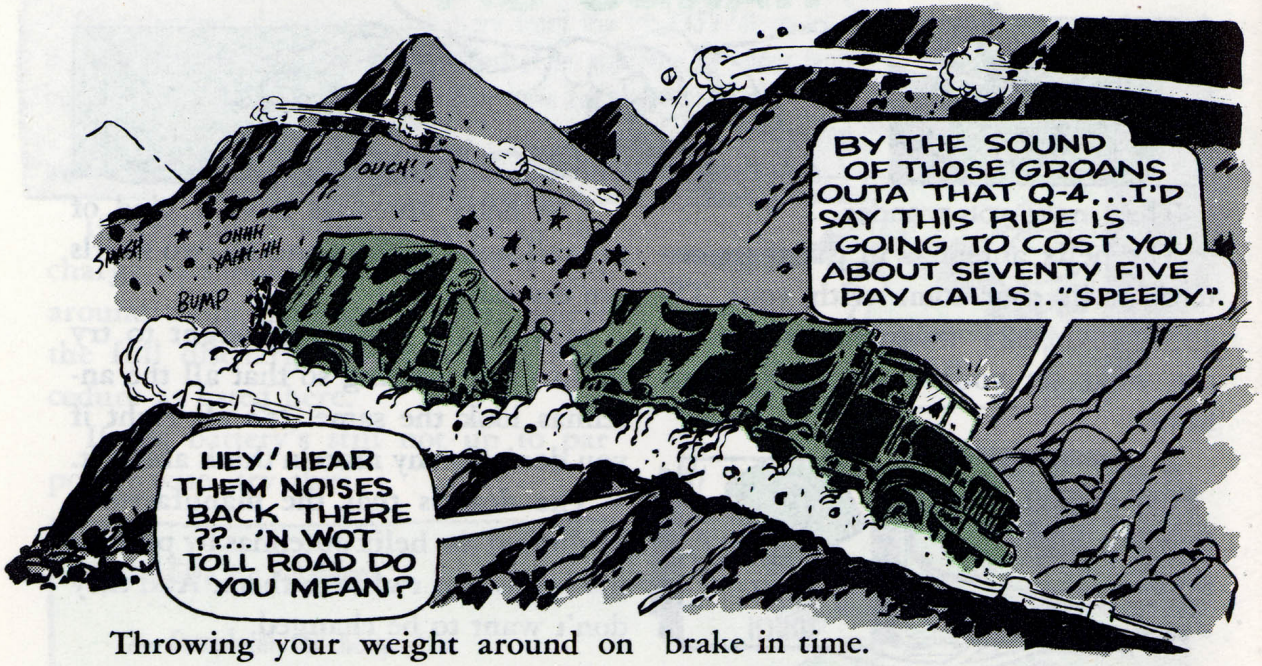


Like maybe you can't find any base plate or base clamping nut nowhere nohow?

Well, you can quit feelin' so blind or guilty now. The base plate and base clamping nut existed only on the pre-production model of the mast and they aren't part of the production model you've got.

No sweat. Just go on with your erection as if they never existed.

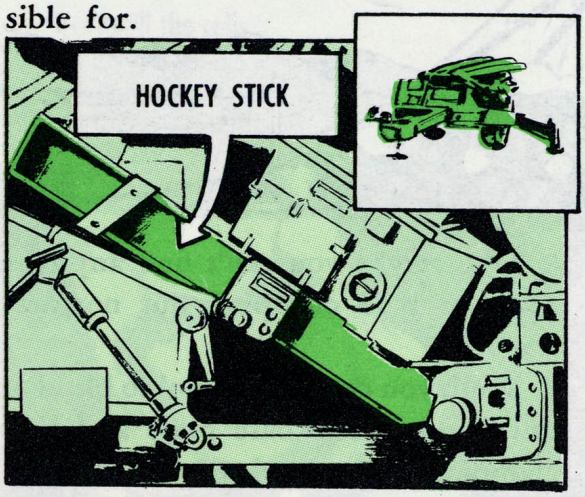
SLOW DOWN ON BUMPS



Throwing your weight around on the hockey sticks of the AN/MPQ-4A radar set can put you on a cash-reducing diet in a smashing instant.

Like, it can keep your wallet flat for years . . . and years . . . and years.

Your weight means all that poundage of the Q-4 supported by the hockey stick assembly, which you're responsible for.



So all right. Now, figure you're taking the Q-4 for a ride on its trailer. The terrain's flat, and you're trying to make a little time. Suddenly, whammo! Up snuck a bad bump and you couldn't brake in time.

At night, especially, you could be in or at a hole the second you realize it's there. And you can hit it—but good.

Those rugged hockey sticks can support a lot of weight, but the force of that weight really multiplies when you hit a bad bump at more than a crawl. If the sticks go, the expensive components and sub-assemblies they support really crumple. Result: damage running in the thousands of dollars.

What do you do to avoid this? Aside from having another vehicle running interference and signalling you, go slow and use your good common sense. When you see a bump, try to avoid it. If you've gotta go through it, really go slow. Like, fix it so's your wheels are just about turning. Just jog your logic a minute and you'll see that the truck you're usin' is considerably more rugged than the Q-4 or its trailer.

Those few minutes travel time you lose could save you, and Uncle, a small fortune.

. . . ABOUT THAT PU-107A/U

Dear Half-Mast,

We've looked high and low but haven't been able to find any publication or parts manual for our Generator Set, Gasoline Engine, PU-107A/U. The pubs on the PU-107/U don't help since the A model is a different breed of cat. Can you help?

Capt B. E. H.

Dear Captain B. E. H.,

It's easy to see why you're having some trouble.

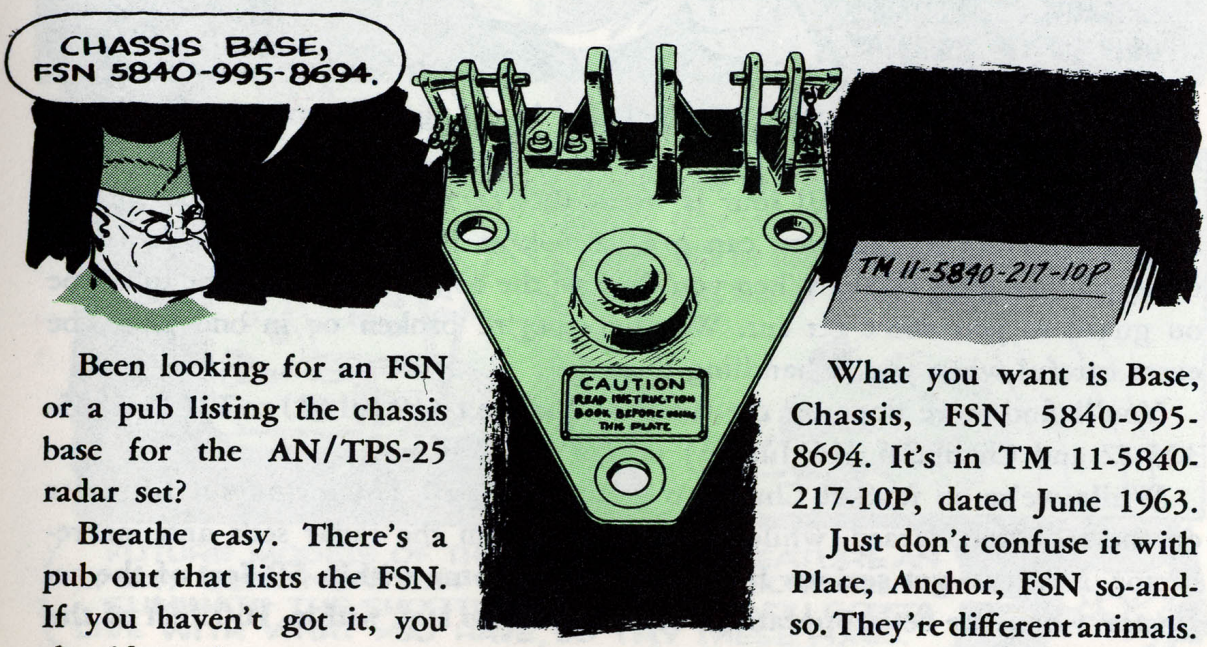
There's no TM on the PU-107A/U, even though TM 11-5840-208-10 on the MPQ-4A radar lists a TM 5-5264.

The preventive maintenance services for the A model are in TB 5-5264-1 (Jun 56). The parts list is ENG 7, 8 & 9-5264 (Dec 56) and the LO is LO 5-5264 (Jun 56).

The PU-107A/U was on its way out when it got a new lease on life by becoming associated with some new equipment, like the AN/MPQ-4A. The U.S. Army Mobility Support Center at Columbus, Ohio, has the maintenance responsibility for this generator, and they'll back it up to the hilt with maintenance and repair parts.

Half-Mast

BASE FOR A TIPSY-25

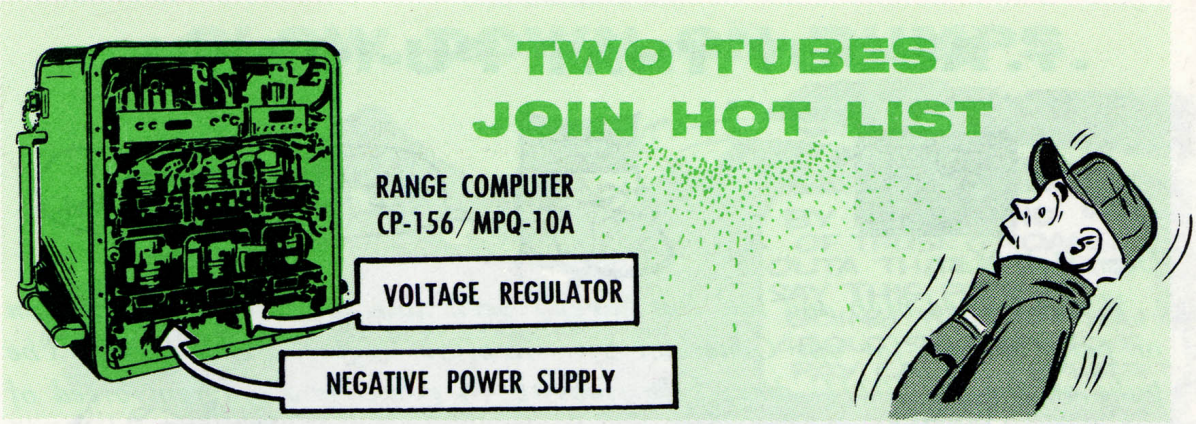


Been looking for an FSN or a pub listing the chassis base for the AN/TPS-25 radar set?

Breathe easy. There's a pub out that lists the FSN. If you haven't got it, you should get it.

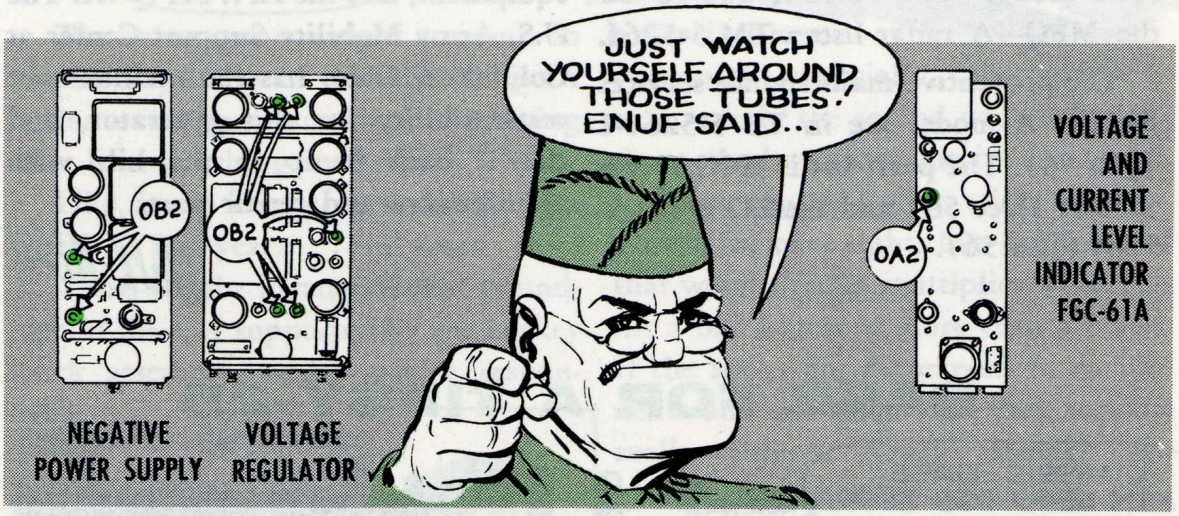
What you want is Base, Chassis, FSN 5840-995-8694. It's in TM 11-5840-217-10P, dated June 1963.

Just don't confuse it with Plate, Anchor, FSN so-and-so. They're different animals. O.K.?



That's the latest on a coupla tubes used with the AN/MPQ-10 and -10A radar sets and the AN/FGC-61A telegraph terminal. New changes to the equipment TM's also include reminders on tubes previously listed as radioactive—the OA2WA and the 1B27, listed in TB SIG 225 and TB ORD 648.

The two that didn't make either TB's list are the OA2, in the volume and current level indicator of the FGC-61A, and the OB2 in the MPQ-10.



Both the OA2 and the OB2 are included in the running spares of their end items, which means you've gotta be doubly careful.

The real hazard with all four is when they're broken. If one does break, keep away from it until you can grab a look at TB SIG 225. Take measures to keep other guys away. When you do read the dope on handling the tubes, be on guard so you don't get cut. Whether they're broken or in one piece, be extra careful when you're handling them.

You'll find more dope on the tubes in Change 1 (19 Jul 63) to TM 11-5805-325-12 and Change 6 (16 Jul 63) to TM 11-1303.

While we're on it, that Change 6 to the MPQ-10 TM includes a reminder on the radiation hazard, while transmitting, from the radar set's antenna reflector. **You can get serious RF burns if you come within 50 feet of the reflector when the set's operating. It's not safe to stay within 160 feet of the reflector for an extended length of time.**

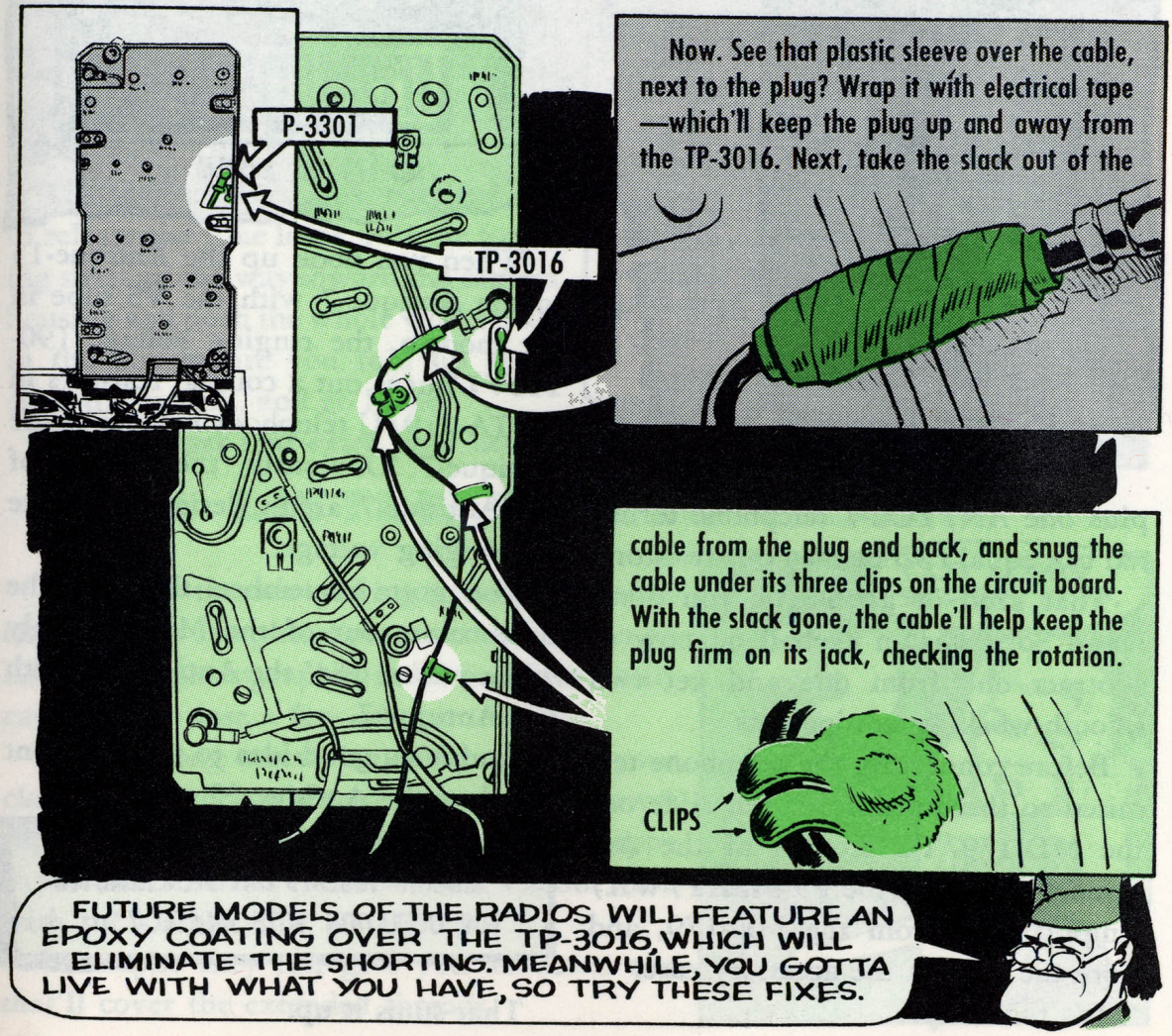
TAPE THIS TWISTER

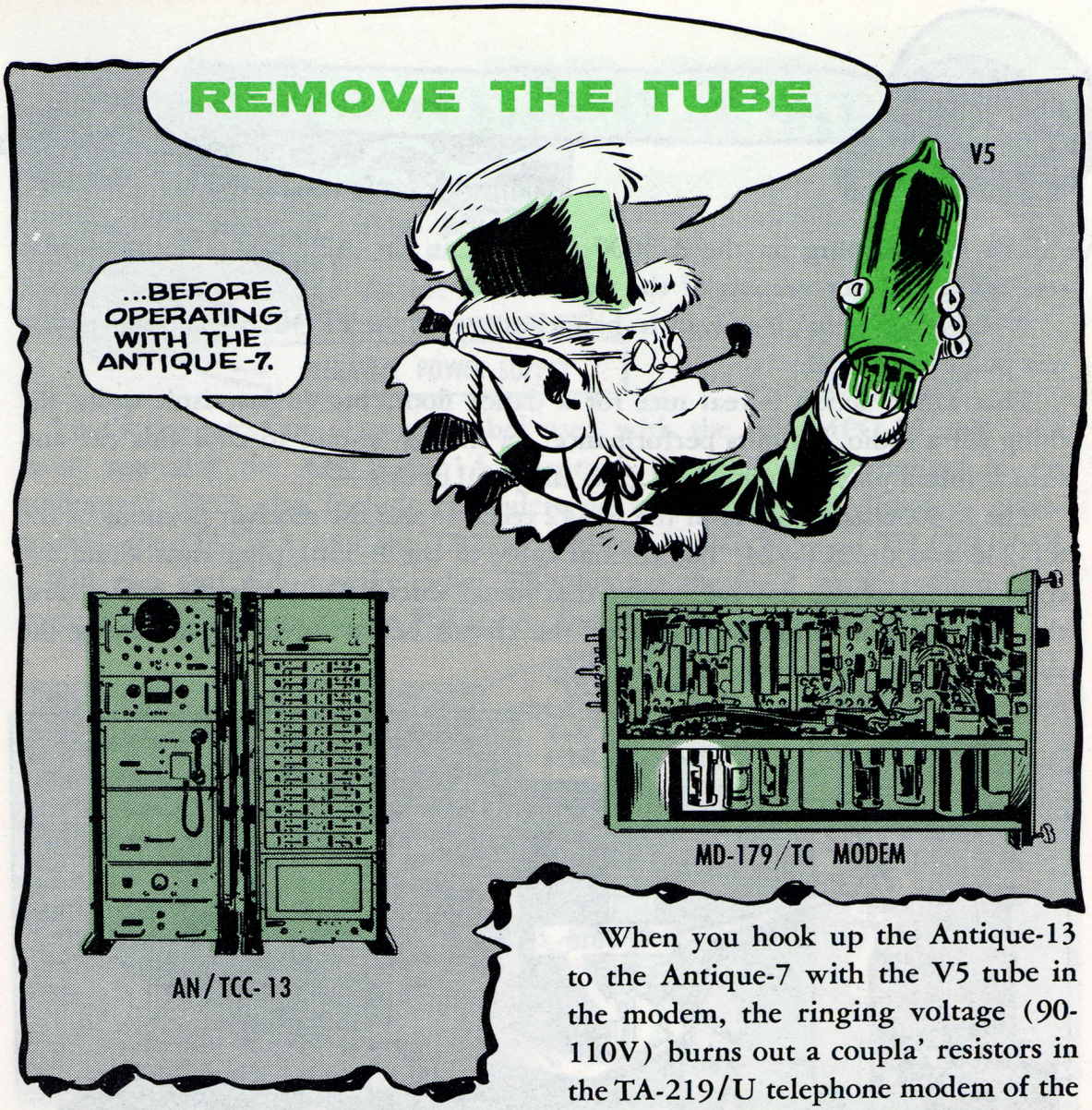
The P-3301 plug on the A-3000 assembly in the AN/VRC-12 series radio sets has a real hot version of the twist.

When it gets goin', it swivels its haunches over to the TP-3016—and shorts that test point to ground.

That kinda action is real nice for a dance floor, but it just isn't quite the thing for a radio. It limits performance, ya know. So-o-o, to cool this cat and turn it into a placid plug again, grab an eyeful of this—

The A-3000 assembly is in the R-442 receiver and the receiver portions of the RT-246 and the RT-524. The coaxial cable of the P-3301 plug runs along the circuit board of the A-3000, under that metal shield. To get at the cable, raise the A-3000 on its hinges and take off the circuit board shield by loosening the slide fasteners. Then, take out the plug.





One AN/TCC-13 multiplexer set plus one AN/TCC-7 telephone terminal can equal two burned out resistors.

That kind of arithmetic you don't want. So, focus an eyeball on how to subtract one from one and get two smooth-working equipments.

Before connecting the telephone terminal to the multiplexer set, slide out the MD-179/TC modem of the Antique-13. Remove the V5 (12AT7WA) ringing tube from the MD-179, and store the tube in the accessory case.

It's that easy.

When you hook up the Antique-13 to the Antique-7 with the V5 tube in the modem, the ringing voltage (90-110V) burns out a coupla' resistors in the TA-219/U telephone modem of the Antique-7. Obviously, the circuits of the Antique-7 aren't designed to take the ringing voltage.

You gotta remember, tho, that the tube comes out of the MD-179 **only** when you're usin' the Antique-13 with the Antique-7.

And it's a good idea to tag the front panel of the Antique-13 with:

> "RINGING TUBE V5 HAS BEEN REMOVED FOR OPERATION WITH AN/TCC-7."

That sums it up.

CARRIAGE TRADE NOT WANTED

A little camera carelessness can bring you the kind of carriage trade that leads straight to grief.

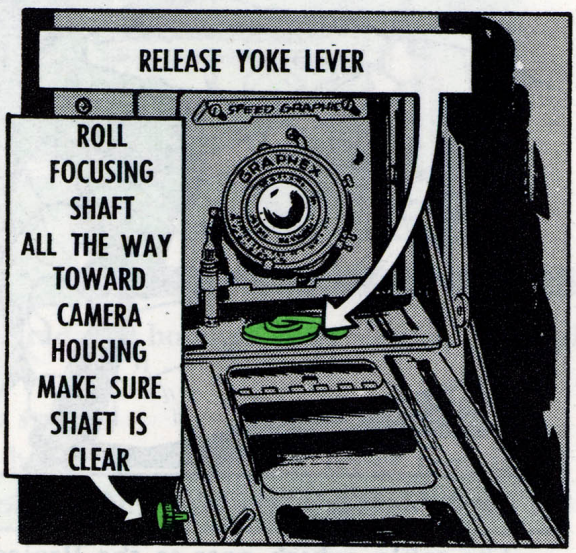
Like, specifically, the trade you'll need if you get careless with the carriage on cameras such as the PH-104 or KS-4.

The way to avoid this, natcherly, is to release the yoke lever, roll the focusing shaft all the way toward the camera housing and push the whole works back in the box before you fold up shop, close the camera, and go home.

If you forget that extra push before you close the box, you can damage carriage, carriage bed, focusing shaft and a coupla' other parts. And the bellows you'll hear won't be from the camera.

And, like the sensible cameraman you are, you know you've got to stop and see if the carriage is clear the minute you feel resistance. It's a good sign that somethin's stickin' out just a little too far.

Do yourself a good turn and don't let that thing that's stickin' out be your neck.

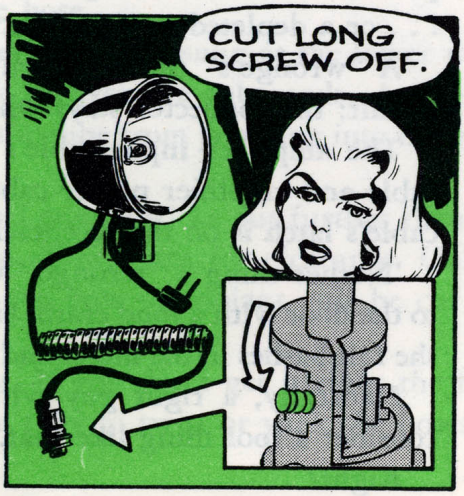


A LITTLE PHOTO FLASH

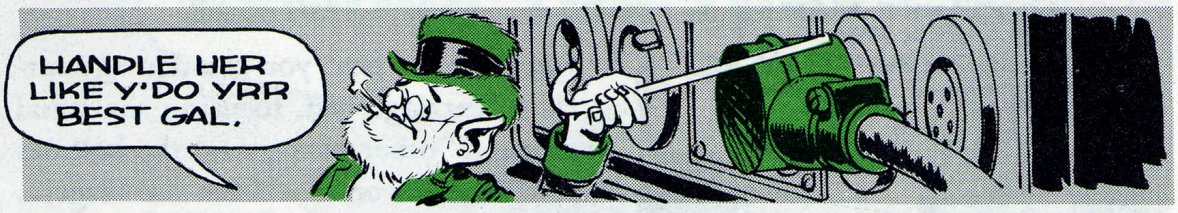
Too many threads sticking through the cable clamp of the lamphead power connector on an LM-33(1) photographic flash unit can easily cause you to lose a few of your own.

The too-long screw can easily snag on your clothing and such when you're toting the power supply. Your maintenance people will be happy to cut off the end of the screw so it's about flush with the clamp.

Or maybe they can give you an acorn nut that'll cover the extended threads.

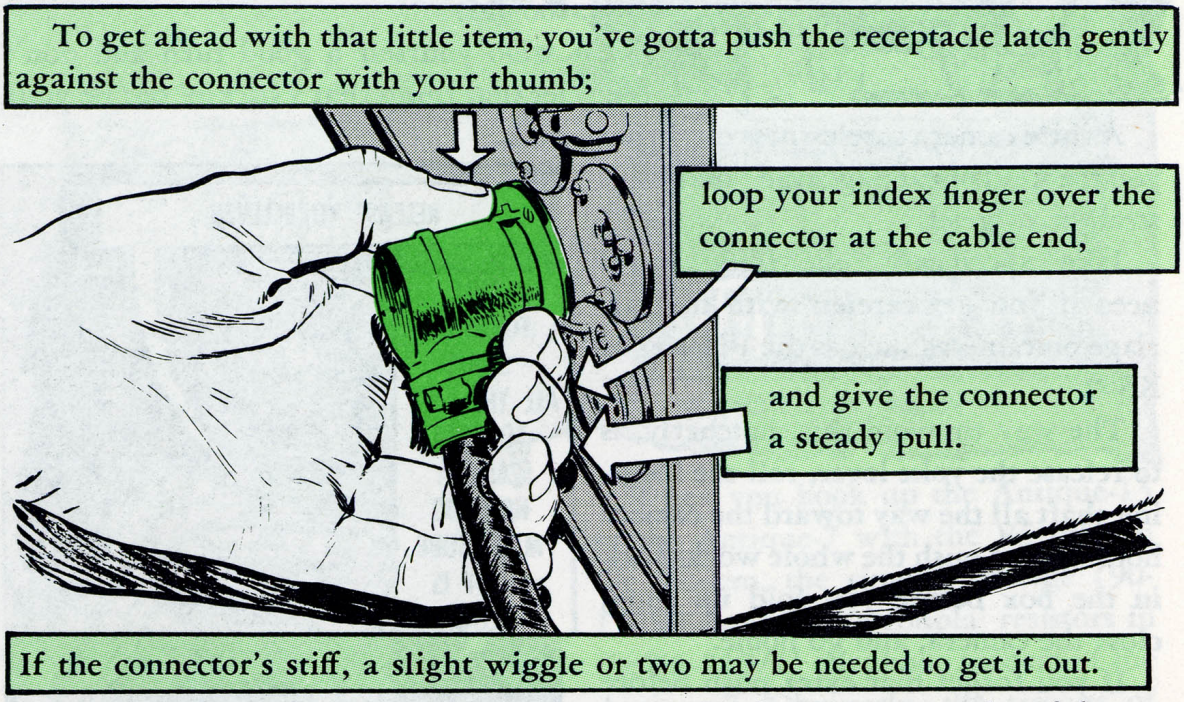


PUSH-PULL SUCCESS STORY



With a little push and the right kind of pull, a man can make a dent in this ol' world.

Conversely, the right push and pull when you're workin' with the AN/PFP-1 projector set can save you a dented head—or wallet. Like when you're removing the amplifier input cable from the AM-424 amplifier.



The cable, which goes to the Projector 1 or Projector 2 receptacles of the amplifier, can net a "wrongo" a dented head from his overworked direct support . . . or a depleted wallet—since he may have to "buy" the cable.

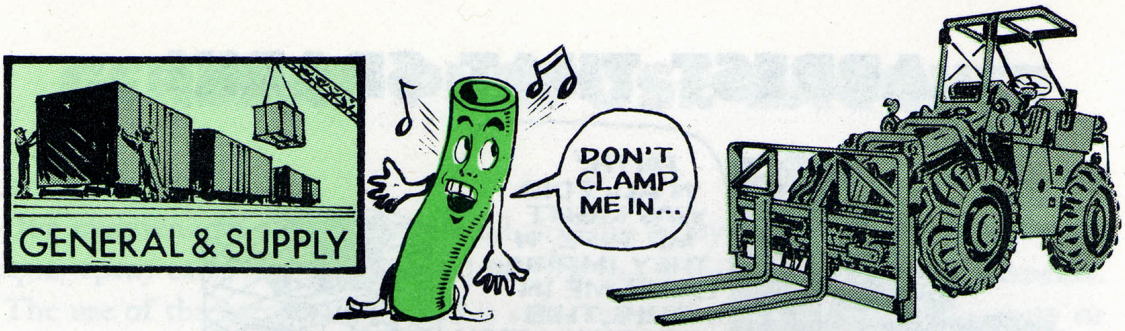
A "wrongo's" the kinda guy who'll press the latch, grab the cable, and yank! Result: the connector stays where it is, altho the cable's no longer attached.

The amplifier input cable's different from the projector power cable, speaker cable and amplifier power cable, which have their latches on the plug. The input cable's latch is on the receptacle.

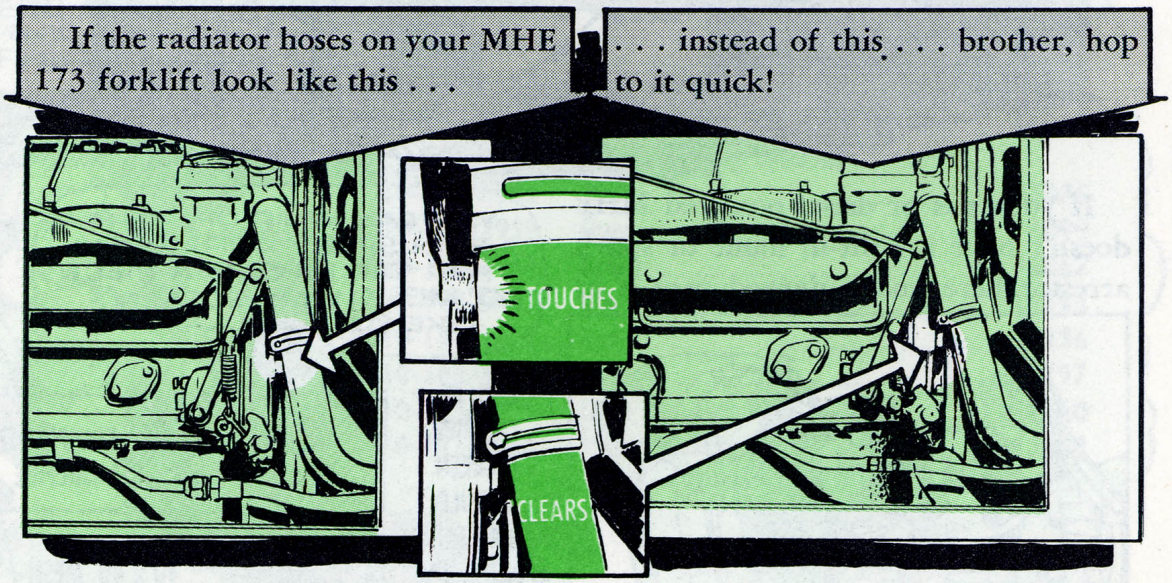
'Nother thing a "wrongo" will do is disconnect the cables and let 'em swish to the floor with a loud crash. Since the plug's insulator is protected by soft metal, the fall bashes in the metal and nearly always cracks the insulator.

Naturally, a right guy with the push to beat this ol' world wouldn't even consider a fool thing like that.

Right?



THE HOSE KNOWS



You either have the wrong lower radiator hoses on there, or they're installed wrong.

Either way, your engine's in a hot spot.

Loosen the clamps. Take off the hoses. Make sure the lower hose is cut the right length from the 5-ply bulk that TM 10-3930-223-20P (Feb 63) calls for . . . FSN 4720-223-8735 (Ord).

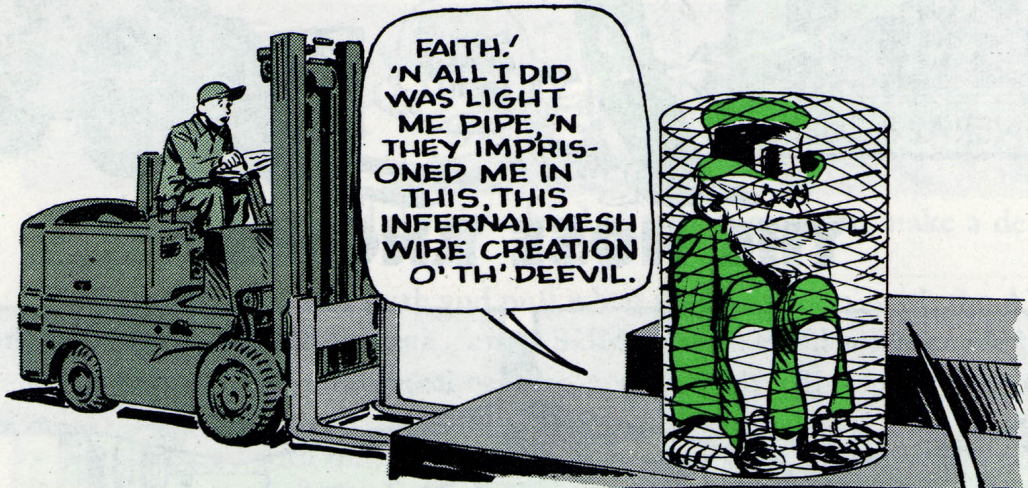
Then check the lower radiator hose tube. If it's damaged, get a new one. Replace the pre-formed water pump-to-tube hose.

Now put the hoses back on just right. Get them real snug at the lower radiator and water pump ends, and fit 'em just so over the tube ends. And—get this!—clamp 'em at the right angle to keep the tube from jamming into the governor mount housing.

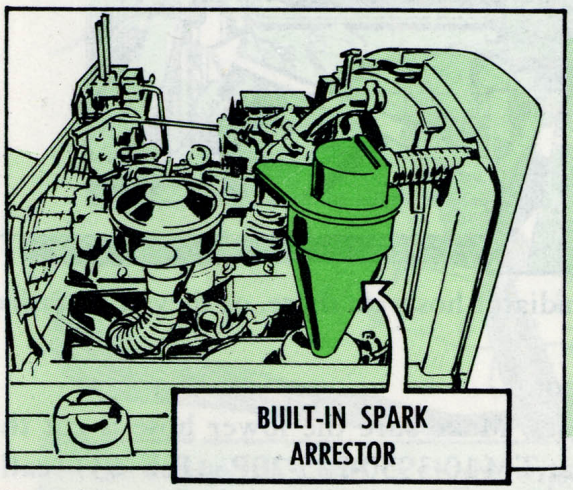
Trouble is, the housing on the Continental engine sticks out further than on the Waukesha (MHE 165) and you have to allow extra for clearance. Unless you do, the pre-formed hose will collapse, the flow of coolant will be cut off or down . . . and goombye!

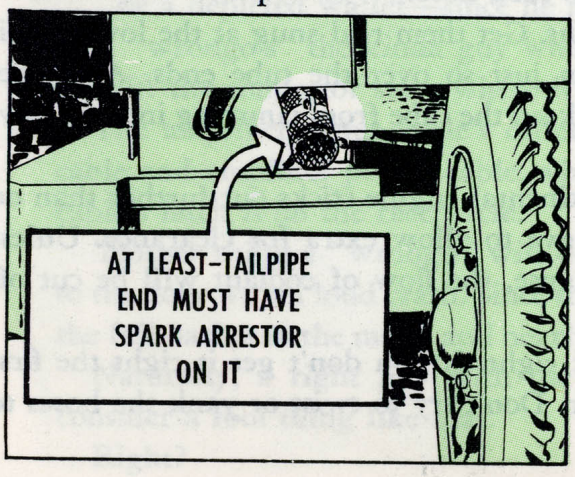
Takes only a minute more to do it right. If you don't get it right the first time, loosen the clamps and start over. Don't try to twist or yank the hoses to get that clearance.

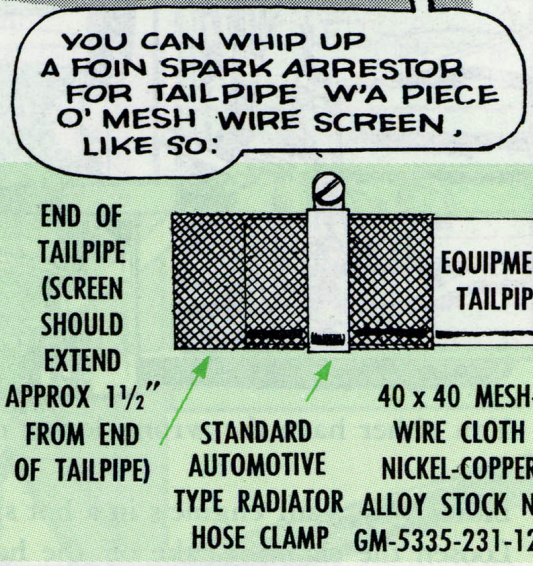
ARREST THAT SPARK!



If your gas or diesel-powered MHE doesn't have a built-in flame or spark arrestor here, make darned sure it at least has one at the end of the tailpipe when you're working around stuff that'll burn or explode.







The close tolerance on the end of the tailpipe is to let you operate in close quarters.

The whole scoop is spelled out in a new para 6.0.12.2.4.1.2 in the safety chapter of TM 743-200 (June 55), w/changes.

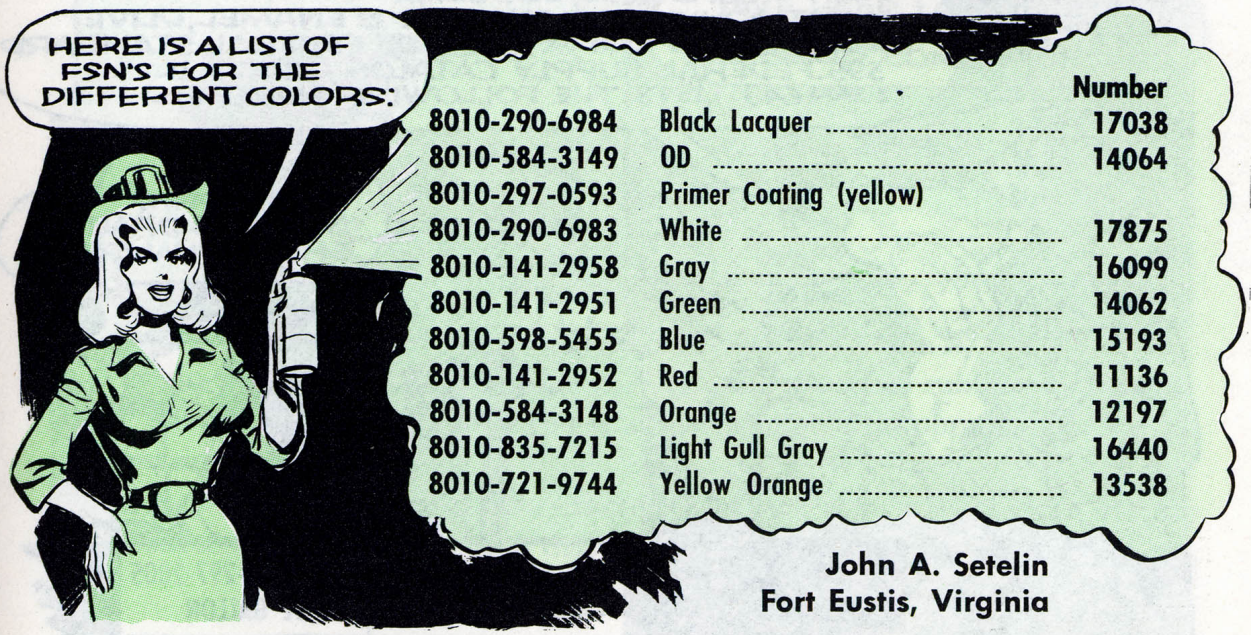
You want to remember, though, that this screen will need cleaning at least every 60 operating hours. Might be a bright idea to jot down the hourmeter reading on the DA Form 2400, when you install it so that cleaning this screen can be made part of the weekly PM check.

GENERAL PURPOSE LACQUER

Dear Editor,

Our maintenance shops have found that the Army supply system lists aerosol lacquer spray cans. These work real fine for quick,minor painting requirements.

The use of the aerosol 16-oz can is safe, takes little room, with no muss or fuss in cleaning paint guns or mixing paint to thickness required.



		Number
8010-290-6984	Black Lacquer	17038
8010-584-3149	OD	14064
8010-297-0593	Primer Coating (yellow)	
8010-290-6983	White	17875
8010-141-2958	Gray	16099
8010-141-2951	Green	14062
8010-598-5455	Blue	15193
8010-141-2952	Red	11136
8010-584-3148	Orange	12197
8010-835-7215	Light Gull Gray	16440
8010-721-9744	Yellow Orange	13538

John A. Setelin
Fort Eustis, Virginia

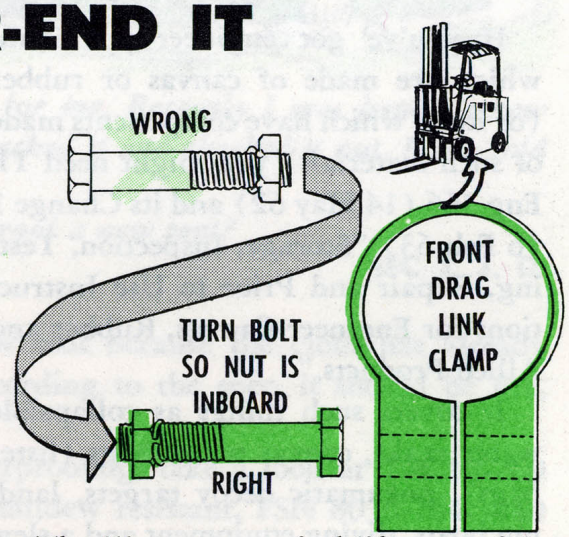
(Ed Note—Handy information to have around when you need gloss lacquer for small jobs. Remember, though, that these FSN's are for gloss, so you can't use 'em on missiles or rockets—or anything else, for that matter—where a lusterless or semi-gloss is called for.)

END-FOR-END IT

Ever found yourself in a bind when making a tight turn with your Towmotor Model 461 (MHE 169) forklift?

The forklift steering gear can get in a bind if the front drag link nut hits the frame on the left inboard side. In that case you can turn so far but no farther.

If you run into this trouble on the turns, check the clamp. A simple switch will take care of it. Turn the clamp bolt end-for-end and install the washer and nut on the inboard side of the clamp.

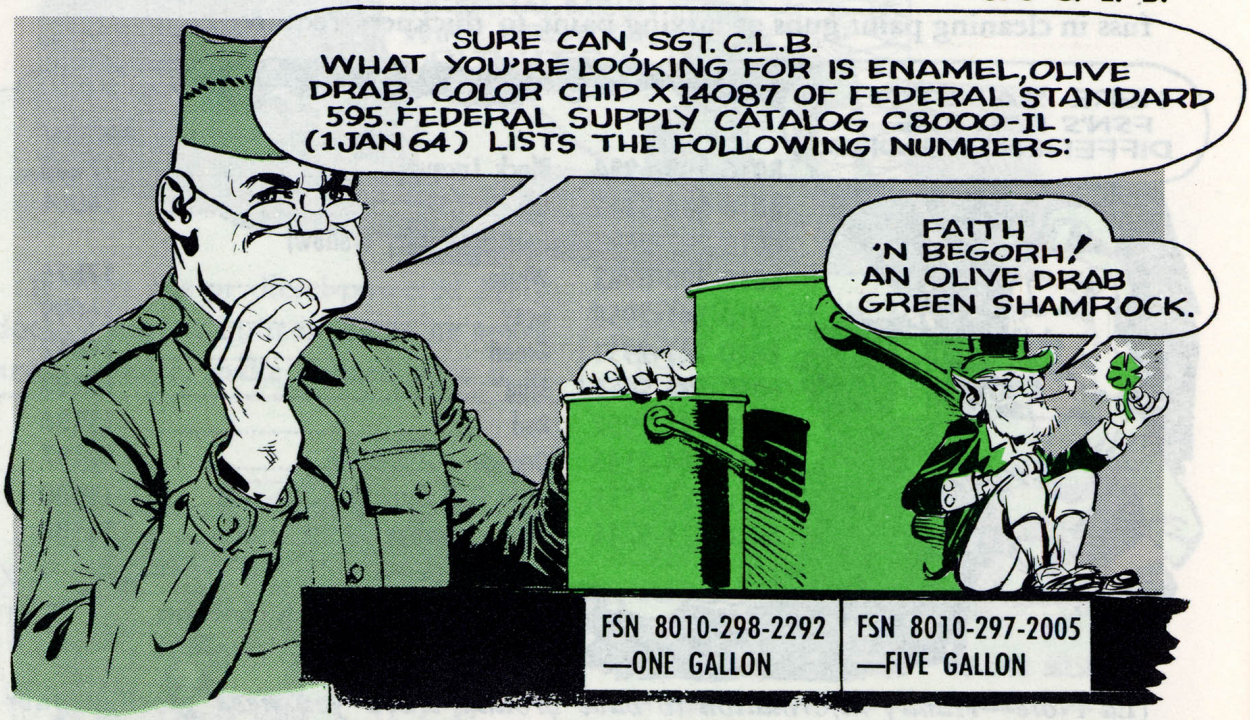


That'll get your forklift out of its steering bind.

COMMERCIAL VEHICLE PAINT

Dear Half-Mast,

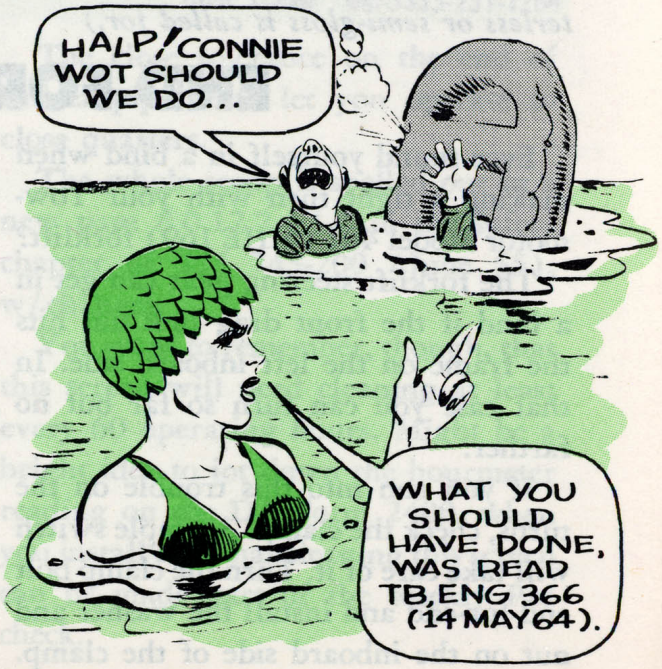
We've been looking for some paint to match the color of our new 4 x 2 van trucks (Chevrolet). We need some for patch-up purposes, but nothing we've found matches the color of the trucks. Can you help? **SFC C. L. B.**



YOUR CANVAS AND RUBBER

If you've got engineer-type items which are made of canvas or rubber (or items which have components made of such materials) you might need TB Eng 366 (14 May 62) and its Change 1 (6 Feb 63) "Storage, Inspection, Testing, Repair and Prior to Use Instructions for Engineer Canvas, Rubber and Allied Products."

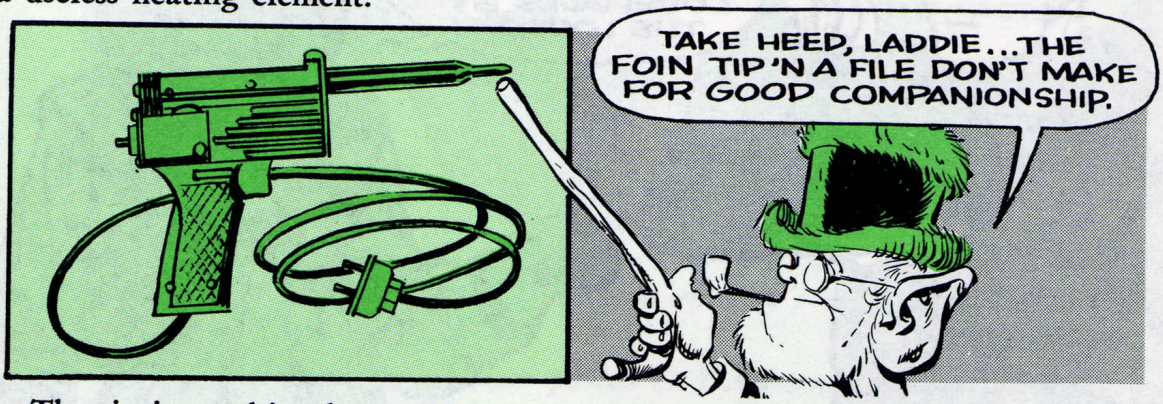
It covers such things as collapsible water tanks, canvas water bags (lister bags), pneumatic decoy targets, landing boats, diving equipment and a slew of other stuff.



SOLDERING GUN TIP

You're only kidding yourself if you think you can keep cleaning the tip of the heating element on your TL 650/U soldering gun with a file, crocus cloth or anything else just as abrasive.

Oh . . . it can be done all right, but someday you're going to wind up with a useless heating element.



The tip is anything but solid . . . so it doesn't take much rubbing with something that has a "bite" before you're clear through the copper shell. Scratch one heating element.

What it comes down to is this—there's only one safe way to clean the tip . . . with a wire brush, and keep that tinned tip wiped clean with a dry cloth.

IS THAT DIP NECESSARY?

Dear Half-Mast,

I hope that you can clear up a point for me. Recently I was issued a new general purpose tent. Even before I unpacked it and checked it out, I was told to waterproof it.

The point is—is it necessary to waterproof a new tent?

SFC J. J. D.

Dear Sergeant J. J. D.,

It's not necessary to waterproof a new tent because the cloth has already been treated with a compound. And, according to the spec, it should be fire, water, weather and mildew resistant.

If you do have a tent that needs waterproofing, take a look at TM 10-269 (Jul 48). You use Compound, textile, mildew resistant, FSN 8030-264-3840 for 5 gallons (SM 5-C8000-IL).

Half-Mast

CURE FOR GAPOSIS

Those rocket fuel handler coveralls, FSN 8415-272-3004 through FSN 8415-272-3012, are made so you'll be protected in case of spills, splash, or spray.

You have to take care of those coveralls if you expect them to be in tip-top shape when you need 'em. And, you'll need 'em when you're handling fuels and oxidizers.

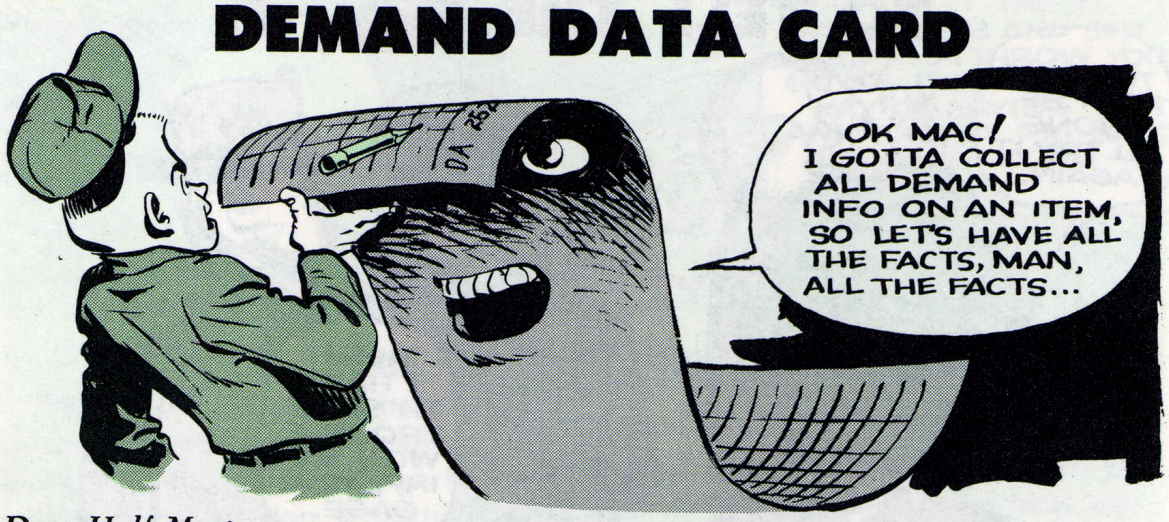
One of the things to keep in mind is that "take care of" means when in storage, too.

There are loops on the coveralls so hang them by the loops in a clean, dry place. The bottoms of the coveralls should be at least six inches off the floor.

Never, repeat never, fold or crush those coveralls. Here's what can happen if you do—Gaposis. There are two rubber lips that seal the slide fastener. When those coveralls are folded you may find that the seal is no longer a seal and they may gap open in spots.

Inspect 'em like it says in para 11b (3) of TM 10-279 and toss out any that are defective. (You might want to make a note that TB 10-277 and TB 10-278 are superseded by TM 10-279 and **not** TB 10-279.)

DEMAND DATA CARD



Dear Half-Mast,

I've checked several places and I've come up with several different answers. Can you tell me:

Is the initial demand for an item posted on DA Form 2527, "Record of Demands"? Or does the card take only replacement demand info?

PFC R. M. B.

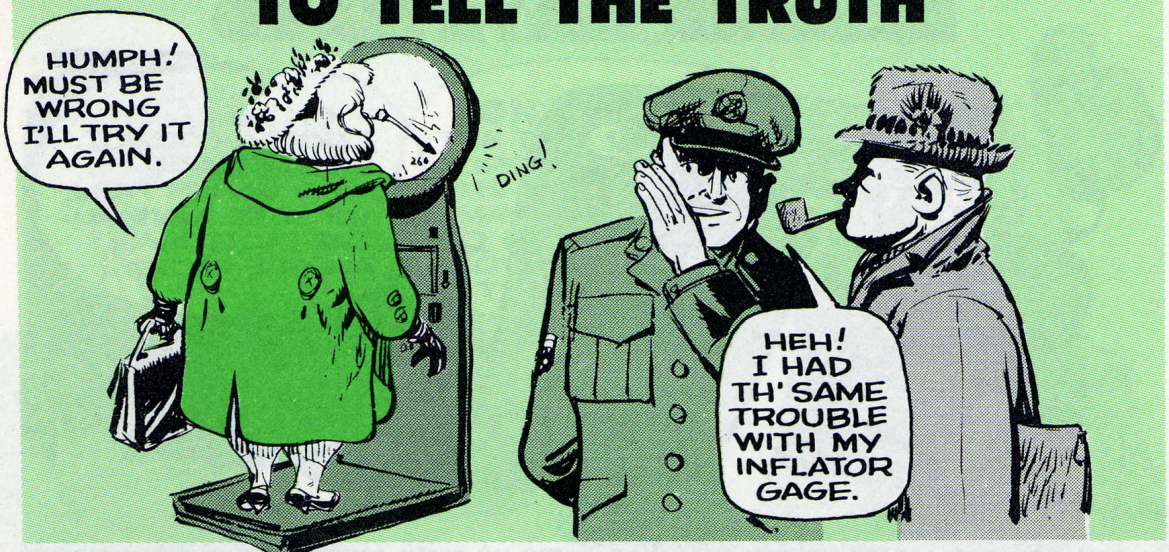
Dear PFC R. M. B.,

Whatever amount you start out with gets posted on the item's ROD (Record of Demands) card—just like any other demand.

Main reason for keeping DA Form 2527 is to help you adjust your authorized allowance of repair parts. See para 30b(2), AR 735-35 and para 29c in the AR's Change 4 (27 Nov 63). If you don't record all demands you won't have the complete "demand" story when you go to tally-up your record.

Half-Mast

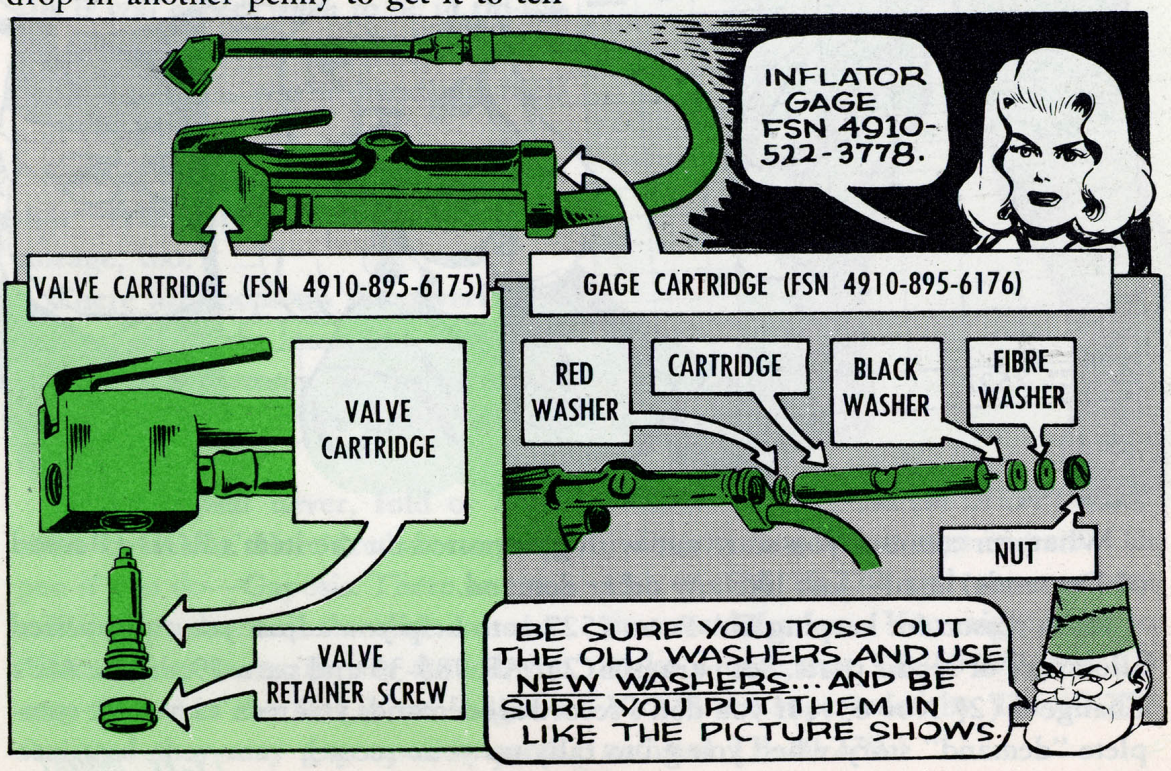
TO TELL THE TRUTH

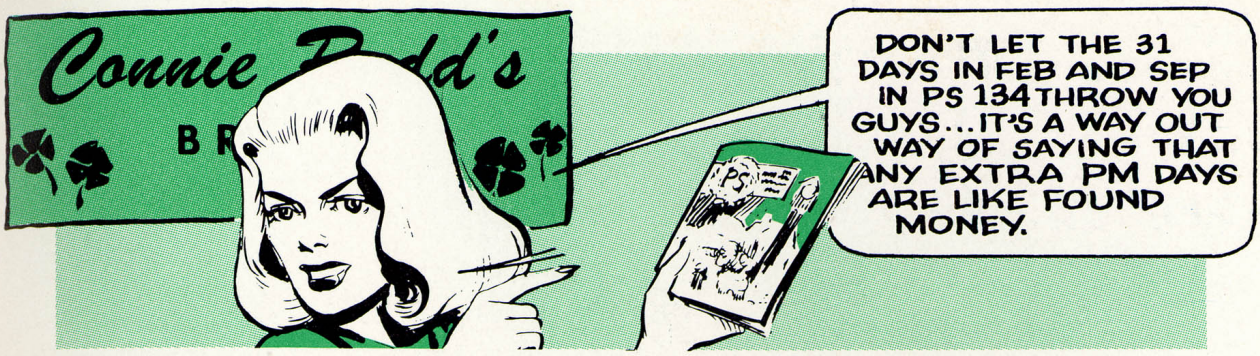


Did you ever see a fat woman get on the scales, drop in a penny, get off, and get back on dropping in another penny hoping the scales had lied to her the first time?

Well, if you've ever used an inflator gage, FSN 4910-522-3778, $6.30 on your pneumatic tires, you might think it has lied to you—maybe it has. You can't drop in another penny to get it to tell the truth, but there's something that you can do. No, you don't have to replace the whole gage—just parts.

Your supply people can get from GSA a gage cartridge (FSN 4910-895-6176) for $2.45, and a valve cartridge (FSN 4910-895-6175) for $1.65. With these, you can make your gage as good as new.





EASE UP, THERE!

The buffer at the end of that cleaning rod section's made of lightweight plastic. Shove it in too hard and the buffer'll break . . . and'll stop protecting your M1's muzzle from burring.

WATCH YOUR DIET

If you're thinking of taking a bite out of one piece of equipment to put another into shape, read the menu first. Rules for cannibalization of low mortality parts for all your Army equipment are in AR 750-1, AR 750-5 and AR 750-50. For some equipment there are special pubs, like SB 5-106 for Engineer-type items. 'Nother thing—keep an eye close to indexes like DA Pam 310-1 and 310-4 for the latest changes in your repair parts cannibalization diet.

HANG ON TO 'EM

This is about your authorized stockage of distributor assemblies. Page 12, PS 135 says that since TM 9-2300-223-20P (Nov 62) no longer lists distributor assemblies as an authorized stockage item, you no longer stock 'em and you turn in the ones you now have. Well, this has all been changed. Hang on to the distributor assemblies now on your shelf because they're again being authorized at organizational level. The whole deal has been reviewed and the latest dope is in Change 1 to TM 9-2300-223-20P (3 Dec 63).

M48A3 TANK LUBE DOPE

LO 9-2350-224-12 (Aug 62) for your M48A3 tank got you shook up? On page 12 it says you lube your track support rollers until grease appears at the relief vent. These track support rollers don't have pressure relief lube fittings so you haven't been short-changed. Just lube the track support rollers quarterly with GAA like you would any other tank without pressure relief vents.

THAT FAT SB

SB 700-20 (Sep 63), "Army Adopted Items of Material," gives you a whale of a lot of supply scoop. It replaces SB 3-33, SB 5-86, SB 9-122, SB 10-509, SB 11-253 and SB 55-31 which listed the adopted items of materiel of the old technical services. It gives you a lot more than the old SB's—like FSN, item nomenclature, expendability info and line item number.

BY REPLACEMENT ONLY

Repair by replacement. That's the story the H-183/U headset (FSN 5965-682-2575) used with your AN/PPS-4 radar set. Because of its low original cost and other factors, it is classified as economically unrepairable. So never mind trying to requisition replacement parts. Just turn in the old one for a new one.

Would You Stake Your Life right now on the Condition of Your Equipment?

YOUR BATTERY WON'T BE COMBAT-READY UNLESS SHE'S DATED

TO GET THE SCOOP ON DATE—
STAMPING YOUR BATTERY,
SEE TM9-6140-200-15

USE THE ALPHABETICAL AND NUMERICAL METAL DIE STAMPING SETS IN YOUR NO. 2 COMMON TOOL KIT (SM-9-4-4910-A86, CH. NO. 1)